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GUIDE.

NEW EDITION.

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EDITED BY

WILLIAM HUGHES, F.R.G.S.,

Late Professor of Geography in King's College, London.

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THE
SEAMAN'S MEDICAL GUIDE

IN

PRESERVING THE HEALTH OF A SHIP'S CREW;

CONTAINING

*Plain Directions for the Use of the Medicines in
the Cure of Diseases, &c.*

WITH FULL INSTRUCTIONS FOR THE

TREATMENT OF FRACTURES AND DISLOCATIONS,

ILLUSTRATED BY NUMEROUS ENGRAVINGS,

THE BEST METHOD OF RESTORING SUSPENDED ANIMATION
FROM DROWNING, &c.

WITH A COMPLETE INDEX OF CONTENTS.

Comprising also the Government Scale of Medicines,

REVISED TO JANUARY 1891,

BY

ARCHIBALD FINLAY,

*Licentiate of the Faculty of Physicians and Surgeons of Glasgow; Licentiate of the
Society of Apothecaries, London; Harbour-Surgeon British India Steam
Navigation Co.; late Surgeon ss. Agra, ss. Abyssinia, ss. El Dorado.*

NEW EDITION.

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PREFACE.

This Work was put forward to the attention of those interested in the proper treatment of the question, long before the subject which it treats upon was honoured with the attention of the Government authorities. In its original form, an earnest and somewhat successful endeavour was made to supply such information as could render the Medicine Chest more extensively useful. While adopting the (imperative) suggestions of the Board of Trade, *which are incorporated into the present edition*, it will be observed that the plan of the work is still wisely adhered to—all subsequent and future alterations emanating from the Honourable Boards of Admiralty and Trade, only resulting in bringing up the standard nearer and nearer to the one exhibited by *this*, the true SEAMAN'S MEDICAL GUIDE.

By careful attention to its contents, to the symptoms and treatment of Diseases and Accidents laid down throughout the work, illness may, in most cases, be alleviated or altogether removed, when it occurs at sea. The work is obviously designed to be of service where professional aid cannot be obtained. When in port, where medical assistance can be had, it would be the greatest folly to forego so great an advantage in the treatment of serious cases.

It will, it is hoped, be found that complete success has been attained on the one hand, in avoiding an extension of the book to an inconvenient size ; or on the other, omitting any observations necessary to render it a *complete Guide* ; preserving, moreover, the character of professional intelligence, and deep acquaintance with its subject—the

prevention and *cure* of disease—without using any expressions not likely to be understood by its readers.

The duties which imperatively demand the attention of captains of vessels, entrusted as they are with serious responsibilities, and often placed in very difficult circumstances, are neither few nor trifling. Among these duties, not the least important are those which arise from their being frequently the guardians of the *health* (or even the *life*) of all on board. By making himself acquainted with the information contained in the following pages, so as to be able to apply his knowledge *promptly*, in the hour of need, a humane commander may entitle himself to the warm gratitude of his crew. It is something to be able to say “I helped to save that man’s life.”

Some of the medicines mentioned in this work are not *yet* included in the orders which issue from the Admiralty and Board of Trade. They have, however, been found to be highly useful additions to the Medicine Chest, and long experience at this SEAPORT has shewn them to be almost absolutely indispensable to the efficiency of the Medicine Chest *when afloat*.

The work is now therefore laid before its immediate patrons, in the implicit belief that it will be found more than ever deserving of their favour, and fully realising all that its original editors considered to be implied by the title which it bore, as a “*Seaman’s Medical Guide*” of superior character.

The Revisor has to acknowledge much assistance and many valuable hints received from Mr. H. Spadaceini, Sanitary Inspector, Port of London Sanitary Authority.

The Publishers have much pleasure in acknowledging their obligations to the Royal Humane Society for their permission to use the blocks illustrating the best method of restoring the apparently drowned.

DOSES OF MEDICINE,

ADAPTED TO THE DIFFERENT PERIODS OF LIFE.

The prescribed doses of *each* medicine are calculated for a grown-up person, throughout this work.

Suppose one drachm of the medicine to be a sufficient dose for an adult (that is, for a person of 21 to 60 years of age), then the other ages will require as below :—

Under 20 years	will require only	$\frac{2}{3}$	or 2 scruples.
„ 14	„	$\frac{1}{2}$	„ $\frac{1}{2}$ a drachm.
„ 7	„	$\frac{1}{3}$	„ 1 scruple.
„ 4	„	$\frac{1}{4}$	„ 15 grains.
„ 3	„	„	10 „
„ 2	„	„	8 „
„ 1	„	„	5 „
„ 3 months	. . . . .	„	4 „

Above 65 years the dose diminishes in a similar way. Women, also, would generally require rather smaller doses than those directed to be administered to men.

Explanation of Weights and Measures.

The *Grains* are distinctly marked on the weights ; everyone of the small *round* impressions (exclusive of the *Stamp Mark*) on the thin weights, stands for a Grain.

WEIGHTS.

3ij	is Two Drachms, or a Quarter of an Ounce.
3i	One Drachm, or 60 Grains.
3fs	Half a Drachm, or 30 ditto.
Ḑij	Two Scruples, or 40 ditto.
Ḑi	One Scruple, or 20 ditto.
Ḑfs	Half a Scruple, or 10 ditto.

The GRADUATED WINE-GLASS is for measuring tea and table-spoonfuls, each teaspoonful being equal to a fluid drachm, or 60 drops ; and each tablespoonful to half a fluid ounce.

The DROP-MEASURE is marked from 5 to 60 drops.

It is always better to *measure* and *weigh* the medicines with *accuracy*. Fatal consequences have resulted from guessing the quantity of medicine ordered.

MEDICAL SCALE FOR MERCHANT SHIPS.

The annexed Scale of Medicines and Medical Stores for Merchant Ships has been issued and caused to be published by the Board of Trade, and is intended to supersede the Scale hitherto in force, all copies of which should be destroyed. It will come into operation on the 1st January, 1891.

HENRY G. CALCRAFT, *Secretary.*

Scale of Medicines and Medical Stores issued and caused to be published by the Board of Trade in pursuance of the Merchant Shipping Act, 1867.

Preparations from British Pharmacopœia, 1867. This column is added for the use of Druggists supplying the Medicines indicated.	Names of Medicines, Medicaments, &c.	Proportion for Ships carrying the under-mentioned number of Men and Boys (for twelve months).		
		10 and under.	11 to 20 inclusive.	21 and upwards
Copaiba *Mist. Sennæ Co.... .. Lotio Hydrarg. Nigra A mixture containing in each 100 parts not less than 80 parts of Carbolic (or Phenic) and Cresylic Acids, and their Homologues; and not more than 20 parts of water.	Alum... ..	1 oz.	2 ozs.	3 ozs.
	Balsam of copaiba ...	4 ozs.	8 "	12 "
	Bicarb. of soda... ..	8 "	12 "	16 "
	Black draught... ..	1 pint	2 pts.	3 pts.
	Black wash	1 "	2 "	2 "
	+Carbolic acid, liquid	½ gal.	1 gal.	2 gals
	Or crystal	4 lbs.	8 lbs.	16 lbs.
	Or Jeyes' Perfect Purifier (liquid) }	4 gals.	8 gals	16 gals
	Or Sanitas Oil	2 gals.	4 "	8 "
	Or Tuson's Liquid Disinfectant }	1 gal.	2 "	4 "
	Or Fletcher's Pino Phenol Purifier }	4 gals.	8 "	16 "
	Or Baird & Co.'s Liquid Neosote }	1 "	2 "	4 "
	Or Garroway & Co.'s Red Cross Disinfectant }	1½ "	3 "	6 "
	Or Penny's Disinfectant and Deodorizer }	1½ "	3 "	6 "
	+Chloride of zinc (Burnett's)... ..	1 gal.	2 "	4 "

* Omit extract of liquorice, and substitute aromatic spirit of ammonia, 1 oz. to 1 pint of the mixture.

† As antiseptic and deodorizing agents for common use.

In the revision of the Medical Scale for Merchant Ships undertaken by the Board of Trade, and published in Circular No. 696, dated March, 1892, the following alterations occur :—

Red Cross Antiseptic Fluid is omitted.

Crimson Fluid containing not less than 2·5 per cent. of Permanganate of Potash or Soda. This should be kept in a glass-stoppered bottle.

Shipmasters are warned that samples of disinfectants supplied will be occasionally taken for analysis, to determine whether they fulfil the requirements of the Board of Trade.

Otherwise, the scale published in the SEAMAN'S MEDICAL GUIDE is quite correct and up to date.

A. FINLAY,
Surgeon,
B. I. S. N. Coy.

August 1st, 1892.

Scale of Medicines—continued.

Preparations from British Pharmacopœia, 1867. This column is added for the use of Druggists supplying the Medicines indicated.	Names of Medicines, Medicaments, &c.	Proportion for Ships carrying the under-mentioned number of Men and Boys (for 12 months).		
		10 and under.	11 to 20 inclusive.	21 and upwards.
	*Condyl's Crimson Fluid	½ pint	1 pt.	1 pt.
	Red Cross Antiseptic Fluid	¼ "	½ "	½ "
	Castor oil	1 lb.	2 lbs.	3 lbs.
Potassæ Tartras Acid	Cream of Tartar	2 ozs.	4 ozs.	8 ozs.
	Epsom salts	3 lbs.	6 lbs.	12 lbs.
Ess. Menth. Pip. ...	Essence of peppermint	—	1 oz.	2 ozs.
Tr. Zingib. Fortior. ...	" ginger	—	1 "	2 "
Liq. Plumbi Subacet.	Goulard's extract ...	1 oz.	2 ozs.	4 "
	Iodide of potassium...	—	2 "	4 "
Tr. Opii	Laudanum	2 ozs.	4 "	8 "
	Linseed meal	—	14 lbs.	28 lbs.
Argenti Nitras ...	Lunar caustic	¼ oz.	½ oz.	1 oz.
	Nitrate of potash ...	2 ozs.	4 ozs.	8 ozs.
Ung. Resinæ	Ointment, Basilicon	3 "	6 "	10 "
" Hydrargyri	Do. Mercurial	1 oz.	2 "	4 "
" Simplex	Do. Simple	6 ozs.	12 "	16 "
" Gallicæ cum Opio	Ointment of galls } and opium	1 oz.	2 "	4 "
" Sulph.	Ointment of sulphur	6 ozs.	12 "	16 "
	Iodoform	2 drs.	4 drs.	6 drs.
	Salicine	2 ozs.	4 ozs.	6 ozs.
Sp. Ammon. Aromat...	Aromatic Spirits of } Ammonia	4 "	6 "	8 "
Liq. Epispasticus ...	Blistering Fluid ...	1 oz.	1 oz.	1 oz.
	Olive Oil	—	8 ozs.	12 ozs.
Lin. Opii	Opodeldoc	3 ozs.	6 "	10 "
Tr. Camph. Co.	Paregoric	4 "	6 "	8 "
Pil. Hydrarg. ...5 gr.	Pills, Blue	1 doz.	2 doz.	3 doz.
" Ipecac. & Scillâ5 gr.	Do. Cough	2 "	4 "	6 "
" Sapon. Co. ...5 gr.	Do. Opium	1 "	2 "	3 "
" Coloc. & Hyosc5 gr.	Do. Purging	3 "	6 "	8 "
" Rhei Co. ...5 gr.	Do. do. Mild	3 "	6 "	8 "
Pulv. Rhei Co.	Powder, comp. rhubarb	2 ozs.	4 ozs.	8 ozs.
" Catechu Cp. } " Cret. Arom. } equal " E. Opio } parts.	† Do. diarrhœa ...	1 oz.	2 "	3 "
" Ipecac. Co.	Do. Dover's ...	1 "	2 "	3 "

* For purifying drinking water when necessary.

† Treble the quantity above indicated to be taken to all tropical ports.

Scale of Medicines—continued.

Preparations from British Pharmacopœia. 1867. This column is added for the use of Druggists supplying the Medicines indicated.	Names of Medicines, Medicaments, &c.	Proportion for Ships carrying the under-mentioned number of Men and Boys (for twelve months).		
		10 and under.	11 to 20 inclusive.	21 and upwards.
	Powder, Ipecacuan.	1 oz.	2 ozs.	3 ozs.
	*Quinine	1 "	2 "	3 "
Sp. Ætheris Nitrosi ...	Sweet Spirits of Nitre	1 "	2 "	3 "
	Sulphate of zinc ...	1 "	2 "	3 "
	Sulphur (sublimed) ...	2 lbs.	3 lbs.	6 lbs.
Tr. Hyoscyami	Tincture of henbane	1 oz.	2 ozs.	3 ozs.
" Rhei	" rhubarb	4 ozs.	10 "	12 "
Lin. Terebinthinæ ...	Turpentine liniment	2 "	4 "	6 "
Acid. Sulph. Arom. ...	Elixir of Vitriol ...	4 "	6 "	10 "
Liq. Ammoniaë	Spirits of Hartshorn	4 "	6 "	10 "
	Bromide of Potassium	3 "	5 "	8 "
	Chloric Ether	3 "	5 "	8 "
Pulv. Jalapæ	Powder of Jalap ...	3 "	5 "	8 "
	Camphor	2 "	4 "	6 "
Tr. Ferri Perchloridi ...	Tinct. of Steel	3 "	6 "	8 "
Tr. Benzoini Co.	Friars' Balsam	6 "	6 "	6 "

PARTICULARS.	Scales of Medical Stores and Necessaries.	Proportion for Ships carrying the under-mentioned number of Men and Boys (for twelve months).		
		10 and under.	11 to 20 inclusive.	21 and upwards.
	Adhesive plaster on unbleached calico in tin case	1 yard	2 yds.	3 yds.
	Lint	$\frac{1}{2}$ lb.	$\frac{3}{4}$ lb.	1 lb.
1 grain, 2 grains, etc., must be stamped in English figures and words on each respective weight, the word <i>scruple</i> must not be used at all (the scruple weight being marked 20 grains), the $\frac{1}{2}$ dram, 1 dram, and 2 dram weights must be also marked in English figures and words.	Scales and weights ...	1 set	1 set	1 set

* Treble the quantity above indicated to be taken to all tropical ports,

Scale of Medical Stores—continued.

PARTICULARS.	Scales of Medical Stores and Necessaries.	Proportion for Ships carry- ing the under-mentioned number of Men and Boys (for twelve months).		
		10 and under.	11 to 20 inclusive.	21 and upwards.
The fluid drop measure must be marked <i>dram</i> and divided into 40 <i>drops</i> , the word <i>minim</i> being omitted altogether.	Graduated drop mea- sure	1	1	1
The fluid 2 oz. measure must be marked 2 <i>ounces</i> , 1 <i>ounce</i> , 2 <i>table spoonsful</i> , 1 <i>table spoonful</i> , and 1 <i>tea spoonful</i> .	Graduated 2-oz. mea- sure	1	1	1
	6-oz. bottles	$\frac{1}{2}$ doz.	$\frac{1}{2}$ doz.	1 doz.
	Corks for bottles ...	1 „	1 $\frac{1}{2}$ „	2 „
	Scissors	1 pair	1 pair	1 pair
	Syringes	2	2	4
	Lancet	1	1	1
	Abscess do.	1	1	1
Leg and arm size ...	Bandages	3	6	6
Triangular bandage, base 48 ins., sides 33 ins. each.	Triangular do. ...	2	3	4
Flannel bandage, 7 yds. long, 6 ins. wide.	Flannel do.	1	1	2
	Calico	3 yds.	4 yds.	6 yds.
	Flannel	2 „	3 „	6 „
	Needles, pins, thread, and tape	1 pap'r	1 pap'r	1 pap'r
	Splints, common ...	1 set	1 set	1 set
Printed directions for use	Enema syringe ...	1	1	1
	Pewter cup	—	1	1
	Teaspoon (pewter) ...	—	1	1
	Bougies	1 set	1 set	1 set
	Esmarck's Tourniquet (plain, with hooks)	1	1	1
No. 8 (<i>Gum Elastic</i>)	Catheter	1	1	1
	Gum elastic catheter	Complete set.		

Scale of Medical Stores—continued.

PARTICULARS.	Scales of Medical Stores and Necessaries.	Proportion for Ships carrying the under-mentioned number of Men and Boys (for twelve months).		
		10 and under.	11 to 20 inclusive.	21 and upwards.
36 in. Single Reversible	Trusses	1	2	3
	Sponges	1	2	3
	Plaster of Paris for bandages	1 lb.	1 lb.	1 lb.
	Bed-pan	—	1	1
	Authorized Book of Directions for Medicine Chests	—	—	—
	Oatmeal groats, cr'shed	4 lbs.	8 lbs.	16 lbs.
	Arrowroot	2 "	4 "	8 "
	Pearl barley	4 "	8 "	16 "
	Corn Flour	4 "	8 "	16 "
	Rice	4 "	8 "	16 "
	Or Sago	4 "	8 "	16 "
	Or Cerealine	4 "	8 "	16 "
	Sugar	14 "	28 "	56 "
	Soup and bouilli	6 "	12 "	24 "
	Boiled mutton	6 "	12 "	24 "
	Essence of meat ($\frac{1}{4}$ pint)	6 tins	12 tins	24 tins
	Dessicated soup	4 lbs.	8 lbs.	16 lbs.
	Vegetables, dried or compressed	4 "	8 "	16 "
	Potato (if not in scale of provisions)	14 "	28 "	56 "
	Wine (Port)	3 bots.	6 bots.	12 bts.
Preserve	Brandy	2 "	4 "	6 "
	Stout	2 doz. pints.	4 doz. pints.	6 doz. pints.

The following List of Medicines are not ordered by the Board of Trade, but are recommended in this work. The description and use of each will be found on referring to its page :—

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THE SEAMAN'S MEDICAL GUIDE.

DESCRIPTION OF THE MEDICINES.

1.—ALUM.

A powerful astringent, given to check bleeding from the stomach, bowels, or kidneys, in doses of 10 to 20 grains, dissolved in a glass of water, every 4 hours. Also a gargle for sore throats. (1 drachm, with 1 drachm of Nitre to a pint of water).

As a wash for inflamed eyes, when there is a discharge of thick matter, $\frac{1}{2}$ a drachm to a pint of water.

2.—BLISTERING TISSUE.

To be used only as directed in this book. Blisters are apt to produce inflammation of the kidneys, with pain and difficulty of passing water. When this occurs give the patient plenty of barley water to drink.

3.—BICARBONATE OF SODA.

Useful to relieve pain in the stomach after meals, heart-burn, or indigestion, in doses of half a teaspoonful, with 5 or 10 drops of Essence of Ginger, in a cup of cold water after every meal.

Two teaspoonfuls in a tumbler of rain or distilled water, with or without a tablespoonful of brandy, make an excellent Effervescing Draught when mixed with a tablespoonful of Lemon or Lime-juice, or a teaspoonful of Tartaric Acid dissolved in water. This draught is useful when taken before breakfast, to remove the effects of intemperance over-night.

4.—BLACK DRAUGHT.

An excellent purgative. Dose, one ounce, or 2 tablespoonfuls.

5.—BITTER INGREDIENTS.

Each parcel to be mixed in two quarts of good rum or gin, and frequently shaken. In ten days it may be strained for use. Two teaspoonfuls to be given in a glass of water or wine half an hour before meals when required.

6.—BLACK WASH.

A mercurial lotion for venereal sores.

7.—CHAMOMILE FLOWERS.

A good bitter is made by pouring a pint of boiling water on a handful of the flowers, and allowing it to stand till cold. Dose, a wine-glassful half an hour before meals.

A flannel bag filled with the flowers, soaked in boiling water, and the water squeezed out, makes a useful fomentation, retaining heat a long time.

8.—CAMPHOR.

A strong stimulant and sedative. Given in Cholera and Diarrhœa. Dose, 2 to 10 grains every 4 hours, dissolved in a little brandy or mixed in milk. Used also in Chordee.

9.—CARBOLIC ACID (POISON).

For disinfection. A tablespoonful should be mixed in each pail of water used in washing or cleansing any part of the ship where foul smells exist.

A teaspoonful in half a pint of water may be used as a lotion to all foul and discharging wounds, and as a gargle for foul sore throats.

Carbolic Acid is a powerful poison, and great care should be taken to attend to *all* the directions printed on the bottle or jar. (See Receipt Nos. 13 & 14.)

10.—CASTOR OIL.

The safest aperient. The best to use in all cases attended with irritation of the bowels. It may be given to children. Dose, for an adult, 1 to 2 tablespoonfuls ; for an infant, $\frac{1}{2}$ to 1 teaspoonful.

It may be taken floating on peppermint-water, or wine and water, or simply swallowed from a spoon. Warm the spoon before using it, to prevent the oil from sticking to it.

11.—CREAM OF TARTAR.

A mild aperient. Dose, 1 to 2 drachms.

In Fevers and Dropsy give 20 grains every 4 hours, dissolved in a wine-glassful of water. (See Receipt No. 3.)

12.—CITRIC ACID.

Half a drachm of this acid, dissolved in two tablespoonfuls of distilled or rain water, may serve as a substitute for Lemon-juice.

13.—COPAIBA.—(BALSAM OF CAPIVI.)

A remedy for Clap, to be used when the scalding is nearly gone. Not to be given when the patient is feverish. Dose, half a drachm three times a day. (See Receipt No. 7.)

Also useful in old coughs and bronchitis.

14.—CONDY'S FLUID.

For purifying drinking water. Two or three drops to each gallon of water will usually be enough. It should give a very faint pink tinge to the water. It must never be kept in corked bottles, but always in stoppered. As an injection in clap, see Receipt No. 16.

15.—DOVER'S POWDER. (POISON.)

A valuable medicine for producing perspiration and rest. Ten grains to be given when the patient goes to bed. Let the feet and legs be first bathed in hot sea-water, and then cover the patient up warmly. A basin of hot tea, gruel, or weak wine and water may be given an hour after with advantage. Take care that the patient be not exposed to cold air while in a state of perspiration.

16.—DIARRHŒA POWDER.

For checking slight diarrhœa or purging. Dose, half a drachm ; to be repeated if necessary every 2 hours.

17.—EPSOM SALTS.

A good cooling purgative. Dose, half an ounce to an ounce, dissolved in a large tumbler of water, and repeated every 4 hours if necessary.

18.—ESSENCE OF PEPPERMINT.

For allaying griping pains, and for disguising the flavour of other medicines. Ten to twenty drops should be placed on a lump of sugar, and dissolved in warm water as a dose.

19.—ESSENCE OF GINGER.

For similar purposes to No. 18. Dose, 5 to 20 drops. (See No. 3.)

20.—ELIXIR OF VITRIOL.

Given with Quinine, to assist in dissolving it. Dose, 5 to 20 drops, in water.

21.—FRIAR'S BALSAM.

An old and good application for bruised wounds. Lint should be dipped in it and placed in the wound, so as to exclude the air. Useful in chronic coughs. Dose, 20 drops on sugar every 4 hours. In influenza inhale the vapour through the nose.

22.—GOULARD'S EXTRACT. (POISON.)

For external use only. One small teaspoonful in half a pint of rain or distilled water makes a useful cooling lotion for bruises, sprains, and inflamed skin. Cloths kept wet with it should be laid on the part affected. During the use of this lotion the bowels should be kept slightly open with small doses of Epsom Salts.

23.—GUM ARABIC.

Useful for making a diluting drink in Clap, and cases of difficulty in making water. A tablespoonful may be dissolved in a quart of water. It may also be used in coughs and hoarseness.

24.—IPECACUANHA POWDER.

A good and safe emetic. Dose, half a drachm, in a little water. Plenty of warm water should be drunk a quarter of an hour afterwards, and the patient should be protected from cold. See also "Dysentery."

25.—IODIDE OF POTASSIUM.

A remedy for the secondary effects of the Venereal disease. Dose, 5 to 10 grains in two tablespoonfuls of water three times a day for some weeks.

26.—LAUDANUM, OR TINCTURE OF OPIUM. (POISON.)

A powerful medicine, poisonous in large doses. It is used to procure sleep, to deaden pain, and to quiet the bowels. 13 drops contain as much Opium as one of the pills (No. 39). 15 to 20 drops are usually a sufficient dose, but as much as 40 drops may be necessary. The dose required varies with the amount of pain, and the habits of the patient. If he has been accustomed to take much Opium it will have less effect upon him.

It should not be given to children at all,—being much more dangerous to them than to grown persons.

27.—LINSEED MEAL.

Used for poultices. Mix the meal with boiling water very gradually, beginning with a little of each, and stirring it constantly to prevent lumps from forming. Spread it on linen so as to be about a quarter of an inch thick, and large enough to cover the whole of the inflamed part. It should be changed every six or eight hours, or oftener,—before it becomes sour. A little olive oil or lard may be put into the bowl before beginning to mix the poultice.

28.—LUNAR CAUSTIC.—(NITRATE OF SILVER.)

For external use only. Used to destroy Chancres in the Venereal disease, to reduce "proud flesh," and to stimulate sluggish sores. The point should be wetted before use, and kept

in contact with the sore for some seconds. Skin touched with it soon turns black. Caustic Lotion, made with 10 grains to 1 oz. distilled water.

29.—MAGNESIA.

A mild opening medicine, suitable for children ; also much used in heart-burn, indigestion, gout, and similar complaints. Dose for an adult, for the latter purpose, 10 to 20 grains ; as a purgative, 20 grains to 1 drachm.

30.—NITRATE OF POTASH.

A very useful cooling medicine, increasing the action of the kidneys. It is much used in acute inflammatory diseases, the dose being from 5 to 20 grains three times a day. Two drachms dissolved in $\frac{1}{2}$ a pint of water, with a little sugar, make a good gargle for an inflamed throat. In slight cases 5 grains may be allowed to dissolve slowly in the mouth with advantage.

31.—OINTMENT, BASILICON.

For sluggish sores. Spread it thinly on lint or rag, and apply small pieces where required in the wound.

32.—OINTMENT, MERCURIAL.

To be used only as directed in this book. Small quantities of it may be rubbed in to destroy vermin on the skin.

33.—OINTMENT, SIMPLE.

For dressing sores and blisters. It should be spread evenly, like a thin coating of butter, on soft rag or lint.

34.—OLIVE OIL.

A harmless application, for various purposes described in this book. An antidote for some corrosive poisons.

35.—OPODELDOC.

Otherwise called "Soap Liniment." A useful application for bruises, strains, and rheumatic pains. A small quantity to be well rubbed in. For external use only.

36.—PAREGORIC ELIXIR.

Useful for relieving severe coughs. Dose, a teaspoonful or less, in a little water, two to four times daily.

N.B.—This medicine contains Opium, and is therefore dangerous in large doses, especially to children.—See LAUDANUM.

37.—PILLS, BLUE.

These pills contain Mercury, and should be used only as directed in this book.

38.—PILLS, COUGH.

One may be taken three or four times a day, for troublesome coughs.

39.—PILLS, OPIUM.

To procure sleep, and to quiet the bowels. One pill is a dose.—See LAUDANUM.

40.—PILLS, PURGING.

One, two, or three, as required, may be used to open the bowels. A good plan is to give two at night, and a dose of black draught or salts in the morning.

41.—PILLS, MILD PURGING.

One or two occasionally, to keep the bowels regular, if required.

42.—QUININE.

A substance extracted from Peruvian Bark, and having all the useful qualities of the bark. It is to be given as directed in this book. An ordinary dose is from 2 to 5 grains in Ague, and 1 grain as a tonic.

43.—RHUBARB (COMPOUND POWDER).

Known as "Gregory's Powder." A mild and safe aperient. Dose, half a drachm to 1 drachm. (For children, 5 to 10 grs.)

44.—SPIRITS OF NITRIC ETHER.

Known also as "Sweet Spirits of Nitre." A popular and valuable medicine, useful in various diseases. It diminishes thirst,

relieves oppression from "wind in the stomach," and increases the flow of urine. Dose, half a drachm to one teaspoonful. It may be taken in barley-water.

45.—SPIRITS OF HARTSHORN.

A strong solution of Ammonia. Its chief use is to revive persons in fainting fits, by being held for a few moments so that the fumes may pass into the nostrils. Care must be taken not to spill any on the skin.

One tablespoonful of this spirit, with one of Laudanum and two of Sweet Oil, make a strong stimulating liniment, for external use only.

46.—SULPHATE OF ZINC.

Known also as "White Vitriol." Half a drachm dissolved in water is a speedy emetic, useful in cases of poisoning.

Six grains, dissolved in half a pint of water, make a useful lotion for inflamed eyes. Twenty grains in half a pint is an injection for the Clap.

47.—SULPHUR.

A mild opening medicine, useful in Piles. A teaspoonful may be taken in treacle or water. An equal quantity of Cream of Tartar (No. 11) may be added, and taken at bed-time for several nights.

Sulphur is also used in an ointment for the Itch. (1 oz. Sulphur to 4 ozs. Lard.)

48.—TINCTURE OF HENBANE.

Used to procure rest. Dangerous in large doses. Usual dose, half a drachm to a drachm.

49.—TINCTURE OF RHUBARB.

Useful in colic and gripes, without looseness of the bowels. It has warming and aromatic ingredients besides the Rhubarb.

Dose, 1 to 2 drachms, twice or three times a day. If there is much pain, 10 drops of Laudanum and half a teaspoonful of Bicarbonate of Soda may be added to each dose.

50.—TARTARIC ACID.

Used chiefly for making an effervescing draught, with Bicarbonate of Soda. (See No. 3.)

51.—TURPENTINE LINIMENT.

A powerful stimulating liniment, to be used as directed in this book. Useful for fomentations in certain cases, to be applied in the following manner :—Let a piece of rag or flannel of the size required be soaked in the liniment and laid on the part. Over this lay a thick piece of flannel or woollen stuff wrung out of hot water, as hot as can be borne ; and cover the whole up with oilcloth or woollen clothes to keep in the heat.

52.—SEIDLITZ POWDERS.

These powders give relief in Heartburn, Indigestion, and in Bilious Affections ; if taken before breakfast they will be found more powerful as an aperient. They are peculiarly beneficial to those residing in hot climates, or on a voyage ; also after indulging too freely in spirituous liquors. (See No. 3.)

By dissolving two teaspoonfuls of Epsom Salts (No. 17), in half a tumblerful of water, and then adding the Powders, a more decided relief will be afforded, where the liver is in an unhealthy state, being inactive or overloaded.

53.—CALOMEL.

This powerful medicine must be mixed up in moist sugar, treacle, or something equally thick. It should not be given in water, or any thin fluids, as it does not mix with them, or answer the purpose. The full dose is six grains.

When the liver is in an unhealthy state, from one to three grains may be taken, with three grains of Rhubarb (No. 4), two or three times a week, at bed-time, and a dose of Epsom Salts on

the following morning. If there is any pain or tenderness of the bowels, the Calomel should be worked off with Castor Oil, in preference to Epsom Salts.

As a *purge*, see Jalap (No. 54) ; or use the same quantity of Rhubarb (No. 43) with it instead.

The mere "gripping" which Calomel causes in some constitutions never does harm, is of short duration, and passes away when the bowels are relieved.

54.—JALAP.

A useful and powerful purge, especially when combined with three grains of Calomel (No. 53). The dose is half a drachm or less, according to the patient's age or strength.

55.—TARTAR EMETIC.

To produce a vomit, dissolve five grains in a teacupful of water ; a tablespoonful may be taken every five or ten minutes, until it operates. It is useful at the commencement of Fever. Drinking plentifully of warm water, from time to time, will prevent too much straining of the stomach while the vomiting lasts. Plain warm water is the safest and best of all things to work off a vomit.

When given in small doses, so as to produce heart-sickness without vomiting, Tartar Emetic is useful in Inflammations of the *Throat* and *Chest*. Dissolve two grains of the Tartar in half a pint of water, and let a tablespoonful be taken every hour, or oftener, so as to keep up the *sensation* of sickness.

56.—CHLORIDE OF LIME.

For purifying the air in any close place having a bad smell, this is of unquestionable value.

As it *destroys* the causes of infection, it is of the utmost importance to use it freely in all offensive diseases ; when sickness prevails on board, or where there is *disease in the air*.

Pour gradually one or two quarts of water to a handful of the Chloride, mixing and stirring well for a short time. Pieces of

old canvas or rag, soaked in it, should be hung up, and kept wet with it, and the liquid frequently sprinkled about ; at night hang up buckets containing the mixture, adding to it some vinegar.

57.—SOLUTION OF CHLORIDE OF ZINC.

For cleansing and deodorizing purposes, same as above. It is called "Burnett's Disinfecting Fluid." To be used according to the directions printed on the bottle.

58.—CHLORAL SYRUP.

(CONTAINS 10 GRAINS CHLORAL IN 1 DRACHM.)

This is a new drug now coming into common use ; it is given frequently instead of Laudanum to obtain sleep and ease from pain, and does not, like it, cause headache and sickness. It is sometimes called Hydrate of Chloral, and may also be obtained in the form of a white lumpy powder. The dose of the Syrup is one or two teaspoonfuls ; or of the powder, twenty grains in an ounce of water every three hours.

Twenty grains of Chloral Powder and thirty grains of Bromide of Potassium (No. 62), every three hours, is a useful mixture in *Delirium Tremens* and Lockjaw.

59.—ETHER.

An excellent medicine in Fainting Fits, Shortness of Breath, and in Spasmodic affections, attended with pain in the Stomach. Forty drops taken with ten or fifteen drops of Laudanum (No. 26), in a cupful of water, will generally give relief quickly.

60.—SPIRITS OF LAVENDER.

In cases of Faintness or Lowness of Spirits, thirty drops may be taken on a lump of sugar, or in a little water. It is also used to cover the flavour of several nauseous medicines.

61.—BLISTERING PLASTER, AND FLUID.

In Inflammations situated in any internal organ (as in Pleurisy, Inflammation of the Liver or Bowels, &c.), the application

of a Blister will frequently be succeeded by the most satisfactory relief. A Blister may safely be applied (*after bleeding*) over any part where there is a deep-seated pain.

When about to be used, the Plaster should only be warmed with the hand, as *heat* tends to deprive it of its good effect; therefore, in preparing a blister plaster, it should be spread with the thumb (thinly, like so much butter), on a piece of sticking-plaster, leaving half an inch of the edge clear of the Blister all round, to catch and hold it to the skin. Or spread it on leather, thin canvas, or stout paper, of the required size. Previously to its being put on, the part should be bathed or sponged with strong vinegar, made warm.

The plaster should be kept on until blisters rise on the skin. When the blisters are sufficiently risen, open them at their *lower edge*, with the *spare* lancet, or by clipping them with sharp scissors, but do not peel away the shrivelled skin; leave it where it is,—it will come off at the right time. Dress the surface with Cerate or Cooling Ointment (No. 34).

If pain and difficulty of making water arise, see “Retention of Urine,” page 96.

A new preparation for raising Blisters is now patronised by the Lords of the Admiralty, and undoubtedly it may be of advantage to have it in the Medicine Chest. It is called Blistering Fluid.

The part to be blistered having been cleaned with a handkerchief, or a piece of linen, brush it over with the liquid, and allow it to dry. The Blisters will generally rise in about six or eight hours; and may be cut, and afterwards dressed with the usual ointment (No. 33).

62.—BROMIDE OF POTASSIUM.

Acts as a sedative to the nervous system. Very useful in sleeplessness, convulsions, and epilepsy, and in the excitement of overworked brain. Dose, 10 to 20 grains every 4 hours. See also 58.

63.—**IODIFORM.**

Useful in Chancres, Syphilitic Sores, foul Ulcers, and wounds of almost every description. The powders should be dusted lightly over the sores.

64.—**AROMATIC SPIRITS OF AMMONIA.—**

(SAL VOLATILE.)

A useful stimulant in nervous headache and faintness. Dose, 30 to 60 drops in a glass of water.

65.—**SALICINE.**

An excellent remedy in Rheumatism and Rheumatic Fever. Dose, 5 to 30 grains in water every 4 hours.

It is sometimes used instead of Quinine.

66.—**CHLORIC ETHER.**

A useful sedative. Dose, 20 to 30 drops. Sometimes used to cover the nauseous taste and flavour of medicine. When rubbed over a recent mosquito or wasp bite, the pain and itching is much relieved. (See also Receipts Nos. 1, 2, and 5.)

67.—**OINTMENT OF GALLS AND OPIUM.**

Used for painful Piles. The piles should first be bathed in warm water, and the Ointment smeared over them every 4 hours.

68.—**OINTMENT OF SULPHUR.**

Used principally to cure itch.—See No. 47.

69.—**TINCTURE OF STEEL—(TINCTURE OF PERCHLORIDE OF IRON.)**

A useful tonic in Blood-spitting, Lung Diseases, and Bleeding from the Bowels and Bladder, in Dropsy, in Gleet, and after inflammation of the bladder. Dose, 10 to 30 drops in water.

70.—ANTIPYRIN.

This is a new medicine coming into general use for reducing high temperature in fevers and other diseases. It should not be given in large doses except by a doctor. It is perfectly safe in doses of from 5 to 20 grains every 4 hours in Rheumatic Fever, Neuralgia, Sciatica, and Sunstroke. It should not be given to persons suffering from a weak heart.

71.—CHLORATE OF POTASH.

A valuable medicine when the gums are soft and spongy, and the mouth and throat are ulcerated.

72.—SALICYLATE OF SODA.

A valuable medicine in Rheumatic Fever and Sciatica. Dose, 10 to 20 grains three times daily in water.

73.—BICARBONATE OF POTASH.

Used in Rheumatism, Dyspepsia, and some Kidney diseases.

Dose, in Rheumatism 30 grains in water; about half that dose in Dyspepsia every 4 hours.

74.—PLASTER OF PARIS.

The chief use of Plaster of Paris is to stiffen bandages used in the treatment of fractures and severe sprains.

The following is the method of preparation and application. *First*—Apply a dry bandage to the limb. *Second*—Make a bandage of muslin 3 inches wide and six feet long, rub dry Plaster of Paris into the meshes. Soak two minutes in water and apply over the dry bandage. It can be strengthened by additional plaster rubbed in. When used in treatment of fractured limbs it should be kept on for the same length of time as the wooden splints (see direction under various fractures). Two days after application it is well to apply a coating of gum or paste.

THE COLD BATH IN VERY HIGH FEVER.

In Rheumatic Fever especially, but also in other fevers, the temperature rises to a dangerous height, from 105° to 108°, and even higher. When this occurs death will quickly ensue if the

temperature is not immediately reduced. By far the quickest, easiest, and best plan is to prepare a bath having a temperature of 96° Fahr., place the patient into it, and gradually lower the temperature by adding ice until the temperature of the patient, as ascertained by placing the Clinical Thermometer in the rectum, indicates 98½°, when the patient should be removed wrapped in blankets and put to bed. This can be repeated as often as the temperature rises above 107° Fahr.

The CLINICAL THERMOMETER is a useful little instrument for measuring the heat of the body. Before using see that the mercury is below 98° Fahr.; if not, take the non-mercurial end between the fingers and thumb and give it a smart shake downwards, and then apply it by inserting the bulb end containing the mercury into the armpit, or fold of the groin, or under the tongue, keeping it there for about five minutes; or you can get the exact temperature of the body in one minute by making water over it. If the thermometer is a self-registering one you can read the temperature at any time; but if not, you must note the temperature before removing it. Having finished the observation, wash and dry it, and shake the mercury below 98° Fahr., and put carefully into the case. The normal temperature of the human body in health is 98½° Fahr.

The following table will be useful in determining the amount of Fever.

			Remedies.
95° Fah.	Very low or collapse temperature.	Dangerous.	Brandy, <i>ad lib.</i>
97° „	Low temperature.	Mod. „	Stimulants.
98½° „	Normal healthy temperature.	—	—
100° „	Slight Fever.	} Not dangerous.	Nitrate of Potash.
102° „	Moderate Fever.		Quinine.
104° „	High Fever.	Mod. „	Quinine or Salicine
105° „	Very high Fever.	Dangerous.	Antipyrine, Ice, Quinine, and the Cold Bath.

RECEIPTS.

I.—STIMULANT MIXTURE.

Aromatic Spirits of Ammonia	...	...	...	6 drams.
Chloric Ether or Spirits of Lavender	...	...	...	2 drams.
Water to	...	...	...	6 oz.

2 tablespoonfuls for a dose every 4 hours.

II.—STOMACHIC MIXTURE.

Compound Rhubarb Powder	...	...	...	2 drams.
Bicarbonate of Soda	...	...	...	3 drams.
Chloric Ether	...	...	...	2 drams.
Essence of Ginger or Peppermint	...	...	...	1 dram.
Water to	...	...	...	6 oz.

2 tablespoonfuls after meals.

III.—SALINE MIXTURE.

Cream of Tartar	...	...	...	4 drams.
Nitrate of Potash	...	...	...	1 dram.
Water to	...	...	...	6 oz.

2 tablespoonfuls every 3 hours.

IV.—FEVER MIXTURE.

Nitrate of Potash	...	...	...	2 drams.
Sweet Spirits of Nitre	...	...	...	2 drams.
Water to	...	...	...	6 oz.

2 tablespoonfuls every 4 hours.

V.—SOOTHING MIXTURE.

Bromide of Potassium	...	...	...	1½ drams.
Tincture of Henbane	...	...	...	2 drams.
Chloric Ether	...	...	...	½ dram.
Water to	...	...	...	6 oz.

2 tablespoonfuls every 4 hours.

VI.—DIARRHŒA MIXTURE.

Diarrhœa Powder	...	...	...	...	3 drams.
Laudanum	...	...	...	...	1 dram.
Water to	...	...	...	...	6 oz..

2 tablespoonfuls after every loose motion.

If blood is being passed, substitute Elixir of Vitriol, 2 drams, for the Diarrhœa Powder.

VII.—CLAP MIXTURE.

Balsam of Copaiba	...	...	...	...	6 drams.
Sweet Spirits of Nitre	...	...	...	...	2 drams.
Water to	...	...	...	...	6 oz.

Shake the bottle and give one tablespoonful every 4 hours.

VIII.—QUININE MIXTURE.

Quinine	...	...	...	...	12 grains.
Elixir of Vitriol	...	...	...	...	1 dram.
Water to	...	...	...	...	6 oz.

One tablespoonful, no water, half an hour before food.

This is a tonic simply. If the mixture is required for Ague, increase the Quinine to 48 grains.

IX.—COUGH MIXTURE.

Powdered Ipecacuan	...	...	...	...	12 grains.
Bicarbonate of Potash	...	...	...	...	1 dram.
Paregoric	...	...	...	...	3 drams.
Sweet Spirits of Nitre	...	...	...	...	2 drams.
Water to	...	...	...	...	6 oz.

Sweeten with sugar or treacle. One tablespoonful every 3 hours.

X.—ALUM AND SALTPETRE GARGLE.

Alum	...	...	...	...	1 dram..
Nitrate of Potash	...	...	...	...	2 drams.
Water to	...	...	...	...	6 oz.

Gargle the throat every 2 hours.

XI.—COOLING LOTION.

Goulard's extract	...	...	...	...	1 dram.
Laudanum	...	...	...	...	2 drams.
Water (rain or boiled)	...	...	...	...	6 oz.

Rags kept wet to be applied to inflamed parts (except the eyes).

XII.—EYE LOTION.

Sulphate of Zinc	...	...	...	...	10 grains.
Laudanum	...	...	...	...	$\frac{1}{2}$ dram.
Water to	...	...	...	...	6 oz.

Bathe the eyes, allowing some to go into the eye.

XIII.—CARBOLIC LOTION.

Carbolic Acid (clear)	...	...	...	...	1 dram.
Water (rain or boiled)	...	...	...	...	10 oz.

To be labelled "Poison." Useful to sponge face and hands when mosquitoes are troublesome.

XIV.—CARBOLIC OIL.

Carbolic Acid (clear)	...	...	...	...	1 dram.
Olive oil	...	...	...	...	4 oz.

A useful dressing for wounds of every description.

XV.—INJECTIONS FOR CLAP.

Sulphate of Zinc	...	..	...	...	10 grains.
Laudanum	...	...	...	...	$\frac{1}{2}$ dram.
Water	...	...	...	...	6 oz.

Inject every 4 hours.

XVI.

Cond'y's Fluid (red)	...	..	...	...	1 dram.
Distilled water	...	...	...	...	6 oz.

Inject every 4 hours.

XVII.—LINSEED MEAL AND MUSTARD PLASTER.

Take 2 ozs. of linseed meal and mix with sufficient boiling water, then add 2 ozs. mustard, previously mixed with 3 ozs. luke warm water. Mix the two together, and apply to the chest in Bronchitis or other inflammations.

XVIII.—TURPENTINE FOMENTATIONS.

Wring a sufficiently large piece of flannel out of hot water. Soak in turpentine and apply quickly. Cover over with anything to keep the heat in, and let it remain for 20 minutes. Remove the fomentation and apply some olive oil.

NOTES RELATING TO THE USE OF MEDICINES, &c.

Whoever has the charge of the Medicine-Chest must take care that it is kept clean and in good order, and that the various bottles and jars are kept closely stopped and tied over, and in their proper places. Almost all medicines are damaged by exposure to the air, even in a very slight degree.

All scales and weights, measures, and other things used in measuring or mixing the medicines, should be carefully cleaned after use, because the smallest quantity of any one medicine becoming mixed with another may spoil it, or seriously interfere with its action.

In measuring the medicines, it is always better to be strictly accurate. In treating diseases, the proper quantity is often of as much importance as the kind of medicine to be used.

Remember always, in giving medicines, that it is safer to give too little than too much.

The lancets should always be most carefully cleaned after use. The best way of wiping the blade is to lay it along one scale of the handle, and wipe it from heel to point; then lay it along the other scale, and wipe the other side in the same way. Never let the point touch anything hard.

One lancet should be kept specially for use in opening abscesses, because a blade that has been wet with foul matter may infect another wound, even after it has been apparently dried and cleaned. Similar precautions should be observed with the bougies, catheter, &c., and any instrument that has been in contact with the fluids of the body.

All lint, plaster, and dressings, that have been applied to discharging wounds, should be thrown away immediately after use.

The Bed-pan should be well cleansed with Carbolic Acid (No. 9) immediately after use. A small quantity of the acid (mixed in water as directed) should be put into it before use.

GENERAL RULES FOR KEEPING THE SHIP HEALTHY.

THE first object is to sail with a healthy crew. Every sickly or diseased hand taken on board is a double loss : he not only requires other men to take his share of the work of the ship, but takes up more of their time in attendance upon him. Masters of ships, therefore, have a strong interest in availing themselves of the 10th section of the Merchant Shipping Act, 1867, which enables them to procure a medical inspection of any man applying for employment in their ships, before entering him upon the articles. Unless this is done, there is always a risk of discovering serious or disabling maladies among the crew before the ship has been many days at sea.

The next thing is to sail with a clean ship. The following extract from an old work entitled "Vandeburgh's Mariner's Medical Guide" may still be useful, though no doubt much improvement has taken place in ships of the better class since the time when it was written.

"For the better information of seamen in general, I shall consider a ship being discharged in dock, and going to prepare for taking a cargo to the East or West Indies. We will suppose the ship has lately returned from one of those places with coffee or sugar, which was damaged on board, and the noxious effluvia, or air arising therefrom, remaining : if the ship be again fitted for sea, without being perfectly cleaned and well ventilated, diseases will certainly ensue, and particularly if sailing towards tropical climates. Another thing, too commonly done, is washing the *shingle* or gravel ballast, while ships are in dock ; the ballast remains wet, and, of course, must decay the bottom of the ship, and not only that, but will also produce foul air, which is highly pernicious to the health of the crew, and destructive to the cargo.

I would therefore particularly advise, on no account to wash the ballast in the hold of a ship, unless sufficient time can be given to have it perfectly dried before the cargo is taken in. Where fires are not permitted while ships are in dock, the best mode of airing and drying a vessel below is by large wind-sails, which should be made of a topmast studding-sail, the head of it confined, or brought to a yard, and three parts sewn together from the foot ; the part to which the yard is fixed must be hoisted up, so that the wind can blow freely through it, and the other let down in the ship's hold, or places requisite to be ventilated and dried ; braces being fastened to the yard to trim it as the wind changes. A wind-sail should be put down every hatchway of the vessel.

“The bread-room should be whitewashed previous to storing the bread, and a wind-sail frequently put in, as nothing tends more to its preservation than airing it. The habitation of the crew should be washed, but never while they are obliged to be in it ; and it ought always to be scraped, or dry-cleaned with rubbing-stones and sand. The between-decks, and the habitation of the crew, as well as the hold, whenever it is cleaned out, should be whitewashed with *quick-lime* ; this may be done at little expense, and is not only a preventive against diseases, but also preserves the timber and planks. If the ship leaks or admits water, it should never remain longer than twelve hours without being pumped out, as the closeness of the well not only rots the pump, but occasions unwholesome effluvia, or bad air ; indeed, if the water has been there a considerable time, the air becomes so bad that no one can go down without risking *life*.

“The ship being well ventilated and ready, and the cargo received on board, the men are generally shipped with scarcely any other clothing than what they have on ; this may have been purchased from houses or cellars at which they have lodged, where the inhabitants have perhaps been afflicted with the typhus fever, or other infectious diseases ; for this reason, it would be always advisable, if possible for the men's clothing to be well

fumigated and aired previous to coming on board. The bedding and blankets should be aired, and the former composed of horse-hair—wool or flocks being more likely to harbour infection, and not so easily cleaned. It would be preferable for the men to sleep in hammocks instead of bed-places, the latter being seldom cleaned; and often, when one of the crew dies of an *infectious* disease, another occupies his place, not thinking any harm can arise."

Though the amount of care bestowed on the internal arrangements and cleanliness of merchant-ships has greatly increased, and the standard of health has consequently improved, of late years, yet there is undoubtedly room for further improvement, especially in the matter of ventilation. Too often, even during the finest weather, the ordinary means of sending plenty of fresh air through the between-decks and hold are neglected. This will never be the case in a well-ordered ship: on the contrary, in fine weather, every means will be taken to make the atmosphere of the interior of the ship as nearly as possible like the open air; and in bad weather a clear fire in a hanging grate, or *chauffer*, will be frequently shifted about between decks, lowered into the pump-well, and moved into any position where it can safely be placed, to dry and ventilate the ship.

It will be desirable to swab out all the sleeping-places for the crew, deck-houses, galleys, cabins, &c., once in every four or five days, with water in which Carbolic Acid has been mixed, in the proportion of a tablespoonful to each bucket.—(See page 2.) Condy's Disinfecting Fluid may be used instead, in the proportion mentioned in the directions on the cases. Whenever any contagious disease has broken out on board, or when you have reason to fear infection from any source, let the same process be gone through every day, and let the mixture be used for washing the men's clothes, &c., but do not increase the quantity of acid in the water, or the metal-work of the ship may be damaged. Let the hold be cleaned out as often as is practicable with the same mixture; and be particularly careful to have all foul places, water-closets, &c., constantly purified with it. When Carbolic Acid cannot be obtained, Chloride of Lime may be used to sweeten the

air and destroy infection. A pan or flat dish containing a handful of it moistened with water may be placed where required ; a little vinegar poured on it now and then will renew its efficacy.

Let the duty of carrying out these necessary measures, and a sufficient supply of the material, be entrusted to some one person on board who shall be responsible for its being done regularly.

In the absence of any better means of purifying the ship, let it be fumigated with tar-barrel staves or tarred rope, burnt in iron pots or in a stove : the hatchways being all shut close and covered with tarpauling. Or let sulphur be burnt in a mess tin with a few dry shavings mixed with it, float this tin in a bucket half full of water. See that every opening is tightly closed, and after careful examination that no person or animal is left inside, sprinkle a small quantity of methylated spirit over the sulphur and set fire to it. Keep the place closed for at least four hours. And afterwards have it thoroughly ventilated with fresh air and washed out. Blankets, woollen clothing, bedding, &c., can be fumigated in this way by hanging them on lines before lighting the sulphur. The amount of sulphur required is one pound for every 1,000 cubic feet of space.

The beds, bedding, and clothing used by Small Pox or Cholera patients should be destroyed, thrown overboard at sea, or burned in harbour. In modern steamers, with steam of over 300° Fahr., good use can be made of steam for disinfection by simply leading a length of steam hose from the exhaust of fore-winch into fore-castle, closing the door and turning the steam on. In a very short time every living thing (bugs, cockroaches, &c.) is destroyed.

FOOD, CLOTHING, AND TEMPERATURE.

Nothing tends more to make men unable to resist the attacks of disease than insufficient or improper food. Be sure therefore to use every means at your disposal for procuring wholesome and varied food for the crew. Shipowners and captains are advised to read the circular recently issued by the Board of Trade on the subject, written by Mr. Thomas Gray, "Department Paper" No. 75, in which the following scale is suggested :—

Proposed VIRTUALING SCALE to be served out to the Crew per day, in addition to the issue of lime-juice and sugar required by law. (By Dr. Spooner.)

	Biscuit	Flour	Beef	Pork	Preserved Meat	Peas	Preserved Potatoes	Preserved Carrots	Butter	Oatmeal	Rice	Marmalade	Sugar	Raisins	Molasses	Suet	Pickles	Tea	Coffee
Sunday .	12 oz.	8	—	—	12 oz.	$\frac{1}{2}$ pt.	—	8 oz.	2 oz.	—	—	—	2 oz.	—	—	—	—	1 oz.	1 oz.
Monday .	12	—	1	—	—	—	2	—	—	4	—	—	2	—	—	4 oz. per week.	—	1 oz.	1
Tuesday .	12	8	—	—	12	—	—	8	—	—	—	—	2	—	—	4 oz. per week.	—	1 oz.	1
Wednesday	12	8	—	12	—	$\frac{1}{2}$	2	—	2	—	4	—	2	—	—	4 oz. per week.	—	1 oz.	1
Thursday .	12	—	—	—	12	—	—	8	—	4	—	—	2	—	—	4 oz. per week.	—	1 oz.	1
Friday .	12	8	1	—	—	—	2	—	2	—	—	—	2	—	—	4 oz. per week.	—	1 oz.	1
Saturday .	12	8	—	12	—	$\frac{1}{2}$	2	—	—	—	4	—	2	—	—	4 oz. per week.	—	1 oz.	1
1 Man per week	5·4	2·8	2·0	1·8	2·4	1 pt.	8 oz.	1·8	6 oz.	8 oz.	8 oz.	1 lb.	14 oz.	8 oz.	$\frac{1}{2}$ pt.	4 oz.	4 oz.	1 oz.	7 oz.

SUBSTITUTES.

Fresh meat to be given instead of salt, and preserved as long as possible after leaving Port.
 Fresh potatoes, carrots, &c., $3\frac{1}{2}$ lbs. per week, instead of preserved vegetables, as long as they last.
 Oatmeal may be substituted for rice in cold weather, and *vice versa* in hot weather.
 Preserved onions may be substituted for preserved carrots.

Fresh vegetables—especially fresh potatoes—ripe fruit, and good pickles, in moderation, are great luxuries and at the same time most wholesome medicines to those who have been a long time without them. In all cases men should not be made to hurry their meals, and should not take any violent exercise immediately after them. Even in hot climates the men should have a good supply of warm woollen clothing. The hours just before sunrise are cold enough to require the warmest garments. Flannel should be worn next the skin in all climates. Sudden changes of temperature are always hazardous. They are often the starting points of Rheumatism, Ague, or Diarrhoea. It is always better to be too warm than too cold. All clothing should be carefully kept clean and dry; and wet garments should be exchanged for dry as soon as the nature of the service permits it. Getting wet through seldom hurts anybody; but sitting in wet clothes until you are chilled is a dangerous habit. The men should not be allowed to sleep on deck unless under a stout awning.

There is a common belief that bathing or washing in cold water when the body is very hot is unsafe. But the fact is, provided the man is not out of breath, nor in a state of great excitement, the hotter the body is when it is plunged into cold water the better, both as regards safety and refreshing effect. In all cases, however, as soon as a man begins to feel chilly, it is time for him to discontinue his bath.

A similar prejudice exists against drinking cold fluids when the body is heated. It is quite true that if a man drinks an enormous quantity of cold fluid when in that state he may make himself very ill, and even endanger his life: but so long as he takes a small amount, and continues the exercise which heated him so as to keep his body warm, there is no danger.

In general terms it may be said that anything which rapidly lowers the temperature of the body and induces a painful feeling of chilliness, is injurious, if it continues any length of time.

It is a very bad practice to maintain a hot and stifling atmosphere in the forecastle and cabins: it makes men liable to colds

and disorders of the lungs and throat. A moderate temperature with good ventilation is the most comfortable as well as the healthiest.

The men's bedding as well as their clothing should be kept carefully clean and dry, and should be brought on deck every day in fine weather. Finally, a ration of hot coffee should be served to the men before turning out in the morning.

WATER.

A plentiful supply of pure water is of the first importance. Many diseases are produced by impure water, *e.g.*, Diarrhœa, Dysentery, Cholera, and Typhoid Fever. Water should be kept in iron tanks, which should be frequently cleansed and cement-washed—in fact this should always be done before taking in a fresh supply. Pure water should be bright and tasteless, and without smell. If muddy, add a little alum, about 1 ounce to 100 gallons.

If there is a suspicion that the water is not good, add a few drops of Condyl's Fluid—if pure and good, a faint pink colour will be produced. If foul, the colour will be quickly destroyed. When this is the case all the water should be filtered before using, and if it still remains foul it should be boiled. Ships at sea on long voyages should carefully collect all the rain-water possible, as it is the purest and best that can be obtained. There are many ports abroad where the water is admittedly bad, such as Batavia, Savannah-la-Mer, Parahibo, ports in Dutch Guiana, Hong Kong, Foo-choo-Foo, Bombay, and Kurrachee. Water from all these ports should be filtered and boiled.

NOTE.—Wherever disease is epidemic, drinking-water should be boiled and filtered.

USE OF SPIRITUOUS LIQUORS.

Probably it will be a long time before people will believe that when plenty of good water is to be had, and men are in good health, they can do perfectly well without spirituous liquors of any kind. Yet this is undoubtedly true, as many instances have shown. For example, during the American War, large armies engaged on most trying service were kept without spirits with great advantage to themselves : and in the American Navy a similar practice prevails. It is a mistake to suppose that spirits can fortify the body against cold. The experience of Arctic voyagers is entirely in favour of the use of coffee, strong broth, or tea for this purpose. Spirits may be, and often are, necessary when a man has been depressed by long exposure to cold ; but their effect is not lasting enough to fortify him beforehand. In fact the men will gladly take coffee, &c., instead of grog in such cases, as they feel the cold so much less on these than on spirits. The evils of drunkenness on board ship are so obvious that it is hardly necessary to do more than refer the reader to the articles in this book on "Delirium Tremens," "Apparent Death," and "Liver Diseases." In tropical and unhealthy climates it will always be the drunkards who are in the greatest danger from malarious influences. A judicious captain will always take pains to enforce his men's attention to this fact.

PREVENTION OF CONTAGIOUS DISEASES.

When a ship arrives off a port where such diseases as Yellow Fever, Ague, or Typhus are known to be raging, the crew should have as little communication as possible with the shore. No man should on any account be allowed to sleep on shore. A dose of from three to five grains of Quinine should be served out to all hands early in the morning, as soon as they turn out. Those necessarily employed on shore in discharging the cargo, watering the ship, &c., should have a double dose. A cup of strong coffee served out to the men every morning will also be of use.

An anchorage should be selected as far off the land as possible, and away from the neighbourhood of marshes. The land-breeze coming over such spots is highly dangerous. The difference of a hundred yards in an anchorage has often made a most marked alteration in the health of a ship's crew, either in increasing the number of deaths, or favouring recovery.

In hot climates awnings over the ship and boats will be of great advantage to health, and wind-sails should be constantly used. The men should never be kept at work under a scorching mid-day sun, during those hours in which the natives of tropical countries seek shelter, nor during heavy rains. Nor should they be exposed, if it can be avoided, in the hour just preceding sunrise, nor in that just after sunset. Neglect of these precautions is sure to be followed by more or less sickness among the crew.

Eating unripe or over-ripe fruit, or an inordinate quantity of ripe fruit, in places where diarrhoea is prevalent, is a common source of disease, and should not be permitted. The danger of drunkenness under the same circumstances has been already insisted on.

When a contagious or spreading disease has already made its appearance on board, the utmost care should be taken. The men should be instructed to come aft for treatment without delay, as soon as the first symptoms shew themselves. The sick must be separated from the rest of the crew, and their quarters kept scrupulously clean and sweet with Carbolic Acid, Condyl's Fluid, or Chloride of Lime, as directed at page 23. All discharges from their bodies, all foul dressings, &c., must be thrown overboard immediately, and the utensils purified. Their usual clothing should be put as soon as possible into boiling water, and as little apparel and lumber as possible should be kept about them. When the sun shines, and in dry weather, all their clothing, bedding, and belongings should be exposed to the air on deck or in the rigging. The deck should be sprinkled with vinegar, and the habitation of the crew well white-washed and kept perfectly dry.

Above all things the captain will do well to remember that under such circumstances the safety of the crew depends in a very

great degree upon his own vigilance and promptitude. He must not allow the crew to become negligent or discouraged. The man who lives in fear of the disease is ready to meet it half way. Some cheerful employment should if possible be constantly provided for the men to prevent them from brooding over the disease, as men who are a little out of health are certain to do if they have no other occupation. And men will face this, as they will other dangers, better or worse according to the example set them by their officers.

GENERAL RULES FOR TREATMENT OF THE SICK.

The sick bay or cabin where the patient lies should be kept sweet and airy. There should never be any close smell in it. No difficulty need be found in effecting this in any but very bad weather. The air should be always kept moving slightly, and a moderate amount of light should be admitted if possible. All unnecessary disturbance to the sick man should be avoided, and he should not be made to talk too much. His face, hands, and feet should be often washed with warm water and soap, and if he can bear it the body may be now and then sponged with weak vinegar and water and well dried. The mouth should be rinsed out with vinegar and water. The hair should be cut rather short, and frequently combed out. The body-clothing should be kept clean and dry, and often changed.

Let some one person be responsible for giving him food and medicines at the proper times, and let no one else interfere. Especially let no one give him any spirituous liquors without instructions.

When a man has been long confined to his berth, great care must be taken that the back and hips are kept clean and dry. If any place looks red or tender, dab it twice a day with brandy or some other spirit, and arrange pillows or pads so as to support the body and take the weight off the tender parts. Such places are liable to break, and become what are called "bedsores," and to be very painful and exhausting to the patient. If the skin comes off apply Basilicon Ointment (No. 31) spread on soft rag.

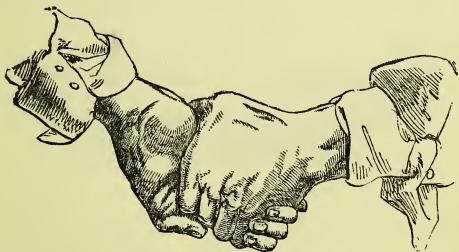
The sick person should be treated as a child. The patience of those who attend on him is often tried to the utmost by his petulance and irritability : but let every man remember that it may at some time be his own lot to change places with the sick man, and to have no more power of self-control than he has.

In all cases, remember the importance of losing no time. Both accidents and diseases which might if taken in hand at once have been easily cured, frequently injure a man for life if neglected.

ACCIDENTS.

When a man has fallen from a height, or been otherwise injured, ascertain at once, if possible, what damage has been done. If a bone has been clearly broken, or a wound inflicted, adopt the treatment described below without delay. But if the nature of the injury is not at once clear, loosen his clothing, especially about the neck, put him on a stretcher, or if that cannot be done, let two men join hands, as shewn in Fig. 1, each man's right

Fig. 1.



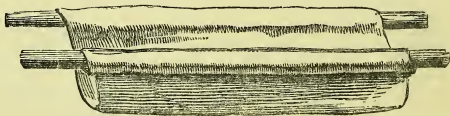
hand grasping the others left, and lift him gently, putting one pair of hands under his back and the other under his knees. Let him be taken to a convenient place, near his berth or cot if possible, and take off his clothes, cutting them off rather than pulling them from the neighbourhood of the injured part. If he be stunned by the blow, and lies pale and faint without moving or speaking,

do not be in too great a hurry to interfere. Mr. Guthrie, the late well-known army surgeon, says of such a case, "It is useless to open the patient's veins, for they cannot bleed until he begins to recover, and then the loss of blood would probably kill him. It is as improper to put strong drinks into his mouth, for he cannot swallow; and if he should be so far recovered as to make the attempt, they might probably enter the larynx (that is, the windpipe), and destroy him. If he be made to inhale strong stimulating salts, they will probably give rise to inflammation of the nose and throat, to his subsequent great distress."

If the skull be not broken, and no blood-vessel burst inwardly, he will soon come round: if otherwise, there is little to be done. Put him to bed, cut his hair short, bathe his head with cold water, and wait for his coming to. In the meantime, if there is manifestly any bone broken or out of joint, you may adopt the means described under the different heads in this work.

A litter may be easily made with a couple of oars or poles and a blanket, as shown in Fig. 2. If the blanket is long enough, it need only be folded; if not, it must be fastened in some way.

FIG. 2.



W O U N D S .

HOW TO STOP BLEEDING.

The first thing to be done in wounds of all kinds is to prevent further loss of blood, and this is sometimes a matter of great difficulty. The first point to be settled is whether any artery is wounded or not. The blood from an artery is of a bright scarlet colour, and is pumped out in jerks by each beat of the heart. If the cut end of the artery is actually exposed, the blood may be seen to spring from it in a jet, which is sometimes thrown to the distance of two or three feet. The reason of this is that the arteries are tubes penetrating the whole of the body, conveying the blood fresh from the heart to all the limbs and organs ; and every beat of the heart is like the stroke of a force-pump. It is this stroke, felt in the artery, which forms the pulse at the wrist and elsewhere.

The veins, on the other hand, convey blood back from the limbs to the heart, and the colour of this blood is dark crimson, with even a bluish tinge. This may be seen in the veins which lie immediately under the skin in fair persons. The blood in the veins flows in an even stream, without jerking.

Therefore, if the blood from a wound is scarlet, and springs or wells up in jerks, you may be sure that an artery is wounded.

If the wound is in one of the limbs, the bleeding may be controlled by compressing the artery at some point higher up the limb. In the case of a wound of the hand or lower arm, the artery should be pressed firmly against the bone by the fingers of one hand, about the middle of the inner side of the upper arm, as shown in the drawing (Fig. 3). For a wound of the leg or thigh, the main artery is most easily compressed on the inner side of the front of the thigh near its upper end, on that part of the groin where a watch lies in a fob. Another mode of compression is by laying a small roll of bandage, or a short piece of stick, over the artery, and binding it tightly to the limb with a hand-

FIG. 3.

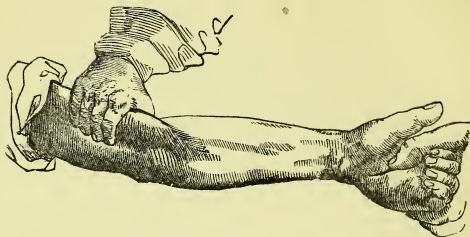
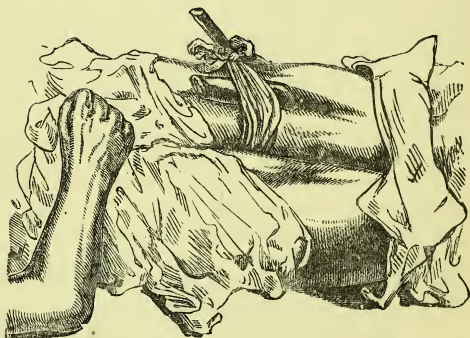


FIG. 4.

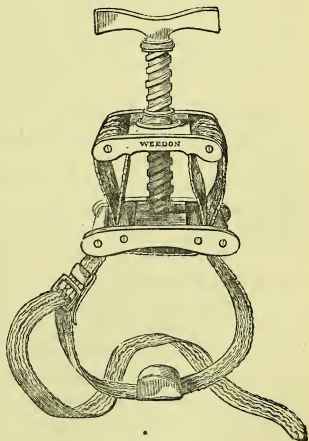


kerchief or piece of linen ; or by tying a large, hard knot in the handkerchief, and tying it round the limb, taking care to place the knot over the artery. For wounds of the foot or lower part of the leg the handkerchief may be tied round the knee, with the large knot in the hollow of the ham. For wounds of the hand or upper arm the knot or pad should be placed as shewn in Fig. 4, on the same spot on which the fingers are pressing in Fig. 3. The handkerchief or bandage may be further tightened by having a stick twisted into it (Fig. 4). The proper instrument for the

purpose is the Tourniquet (Fig. 5), the pad of which is to be placed over the artery, and the strap buckled round the limb, and tightened by means of the screw. Or Esmarch's Tourniquet (which is simply an elastic tube about 24 inches long, and as thick as the little finger, having a hook fixed to the ends, and which ought now to be in every medicine chest) may be applied by putting it on the stretch, and bound round the limb above the wound, and fixing the hooks. The advantage of Esmarch's Tourniquet over the older screw Tourniquet is, that it is easily and quickly applied, and requires no knowledge of the position of the arteries. In applying anything of this kind which goes quite round the limb, it is necessary to draw it tight quickly, so as to stop the beating of the artery at once; because if the veins of the limb are compressed while the artery is not, the blood contained in them is prevented from returning to the heart, and the bleeding from the wound is increased. But at the same time that this is being done, the wound itself should be firmly grasped or pressed as soon as possible, as shewn in Fig. 3, which represents a wound in the hand. In all but very severe cases this will usually suffice to control the bleeding for a time, without the use of the Tourniquet or other means. If the wound be in the hand or arm, the arm should be held up: if in the foot or leg, the patient should lie down, and the leg should be raised.

For permanently stopping the bleeding, one of two modes may

FIG. 5.



be employed. The first is by plugging the wound. This requires to be done very carefully, but any one may succeed in it by attending to the following instructions. First find out the bleeding point. This is to be done by gently clearing the wound of clotted blood and exploring it with the fingers. The place from which the chief stream of blood issues may then be either seen or felt. If the bleeding is stopped for the time by the Tourniquet, or pressure with the hand on the artery, the pressure may be relaxed for an instant, in order to ascertain the bleeding spot, and then immediately renewed. Place a finger firmly on the spot, and with it press down a small plug of folded lint, less than an inch square, on the very point from which the blood issues. On the top of that put one slightly larger, and add another and another, pressing them down firmly until the wound is filled up to a little above the surface. Then put on the top of the pile a thick piece of cork or a piece of wood, and secure the whole with a bandage or strong strips of plaster, taking care that the plug really presses down into the wound at the very spot required. The lint used for the plugs should be dipped in Friar's Balsam, if any is at hand.

The other mode of stopping bleeding from an artery is by tying a piece of silk or thread tightly round the artery above the wounded point. This requires considerable coolness and skill, but it may be accomplished by any handy and resolute man, especially if he has seen it done before. The way of proceeding is as follows :—Having got the bleeding under control by means of the Tourniquet, or by compressing the main artery of the limb (if the wound is in one of the limbs), remove the clots gently from the wound with the help of a sponge, and try to find the spot from which the scarlet blood proceeds. Then with a forceps or pair of tweezers seize the bleeding point, raise it very slightly above the surrounding surface, and tie a piece of strong silk or waxed white thread tightly round it. Then let go with the forceps, and see whether the bleeding from that point is stopped. If it is not, you have failed to secure the vessel, and must try again. If the cut ends of the artery (which appears as a whitish elastic

tube, from the size of a goose-quill downwards) can be seen, there will be no difficulty in seizing them with tweezers or drawing them slightly out with a hook or needle, so as to be able to tie them ; but this will not often be the case. If a wound can be seen in the side of an artery which is not quite cut through, a needle can be passed behind it to lift it up, and a thread tied round the artery, both above and below the wound. When the artery is quite cut through, both ends must be tied. But this will generally be a work of difficulty, because the artery, when cut, shrinks back among the flesh. One end of each thread used for tying an artery should be cut off near the knot, and the other end left hanging out of one corner of the wound. The threads will come away of themselves in from nine to fifteen days. They should not be pulled unless they are quite loose.

The "reef-knot" is the best to use in tying arteries. Great care must be taken not to include any nerves in the knot. A nerve is a white cord which does not beat like an artery.

The mode of tying arteries has been described in order that if there should be any man on board capable of doing it, this book may serve as a guide to him. But if you have not sufficient confidence to try it, it will be better to rely on plugging the wound in the way before described ; always remembering that unless the deepest part of the plug bears exactly on the bleeding point, it will be of no use.

If all other means fail, rather than let a man bleed to death, use that old, and in appearance terrible remedy, the hot iron. Let it be at a black-red heat, and apply the point of it only to the exact place from which the blood issues. The remedy is really not so formidable as it seems. Bandage as before directed.

As soon as by one or other of these means the bleeding has been stopped, let the patient be placed gently in his bunk or cot, in as easy a position as possible, and with the wounded part raised (if this can be done) and very lightly covered. The Tourniquet or handkerchief which has been bound tightly round the limb to control the bleeding should not be taken off, but should be allowed to lie loosely in its place, in order that it may be tightened imme-

diately if the bleeding should return. It is not safe to keep it tight for more than ten or twelve hours at the utmost, for fear of making the limb swell or mortify. The patient should not be left alone for three or four days, because startings of the limb, or movements of the body may throw the dressing or plugs out of place, and cause the bleeding to return at a moment's notice. If this after-bleeding should occur, the Tourniquet or handkerchief must be tightened, the dressings removed, and the wound plugged afresh.

If ice is procurable, let a small bladder filled with it be laid over the wound. If not, let rags wet with cold water be laid over it, and changed frequently, to keep the part as cool as possible.

While you are endeavouring to stop the bleeding, you should gently cleanse the wound from dirt, and any substances that may have found their way into it, with a sponge and cold water ; but when the bleeding has ceased you should allow the dressings to remain undisturbed until they are loosened by the formation of matter, which will have occurred by the fourth day. Then remove what is loose carefully, taking care not to drag anything away by force, and put clean lint or soft rag instead of it. Afterwards treat the wound as you would any other, according to the directions given below.

In *Bleeding from Veins*, the blood is dark and flows in an even stream. It is easily stopped by the pressure of a pad and bandage applied immediately *below* the wound. If applied *above* the wound, the bleeding will be increased.

DIFFERENT KINDS OF WOUNDS.

Wounds are either cut or torn : and those which are torn are attended with various degrees of injury to the surrounding parts. Under the head of torn wounds we include those made by blunt instruments, bayonet wounds, gun-shot wounds, the bites of animals, and the like.

Simple cuts, even if very extensive, are the most easily recovered from ; and those which run in the direction of the length of the limb are the most favourable. Such wounds, if no considerable artery has been injured, and if the patient is healthy, may be very easily repaired in the following way :—First, remove all dirt and clotted blood with a sponge and cold water. Then, if the cut be of moderate size and in a convenient place, bring its edges carefully together, without using force, and keep them in position with long strips of adhesive plaster. If the cut be on a limb, the strips should reach half way round the limb. The plaster should be slightly warmed, and should be pressed on the skin for a minute or two to make it hold firmly. Small spaces, about a straw's breadth, should be left between the strips where they cross the wound ; and moisture oozing from the wound should be dried. Then lay a small piece of lint, thinly spread with fresh Simple Ointment (No. 33), or dusted over with Iodoform (No. 63) which need not be renewed for two days, or with Carbolic Oil (see Receipt No. 14), along the track of the wound, and over it one or two folds of soft rag, and bind up the limb lightly with a bandage, extending some distance above and below the cut. (See the article below on Bandaging.)

If the cut is large, and its edges cannot be brought together satisfactorily by plaster, one or more stitches must be inserted. This will be required most often in cuts on the face, neck, or parts of the body where the plaster cannot be readily applied ; but it will be better to do without the stitches whenever it is possible. Stitches should not be used at all in wounds of the scalp.

The stitching may be done in two ways. A sharp straight or curved needle may be threaded with strong white waxed thread or white silk, and thrust through the skin at about a third of an inch from the outside edge of the cut until the point appears in the

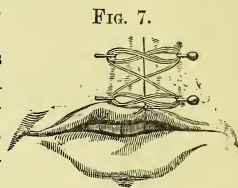
FIG. 6.



wound. The edges should now be brought together, and the needle pushed on so as to come out at about the same distance on the opposite side of the cut. The thread is now drawn through, and the

ends tied firmly with a reef-knot, so as to hold the edges together gently, without any straining (Fig. 6). Then apply strips of plaster between the stitches, and proceed as before.

The other method is to thrust a straight pin or needle (in Fig. 7) through both sides of the wound as before, but a little more deeply, and to whip a thread or silk figure-of-8-ways under both ends of the needle, while the edges of the wound are held gently together. The point of the



pin may now be cut off with a pair of pliers. One advantage of this plan is that the thread is easily unwound and the pin drawn out when required.

The stitches may be about three-quarters of an inch apart. They should be removed in from three to six days, or sooner if the wound becomes greatly inflamed. When the edges of a wound are hard, red, and projecting, and the parts around are painful, hot, and throbbing, inflammation may be known to have begun. All attempts to hold the edges together must now be abandoned, and hot linseed-meal poultices must be applied. The poultices must be changed every four or five hours, or oftener, according to the quantity of discharge coming from the wound. When the inflammation has abated, and the surface of the flesh looks clean and red, water-dressings may be applied instead of the poultices, until the cavity has become filled up with new flesh, over which skin will gradually form.

If a wound that has been stitched, however, does not inflame, it should be allowed to remain as still and undisturbed as possible until the fourth day, when the bandage may be unfolded, and the dressings changed. If the dressings stick together they should be softened and loosened with a sponge and warm water. They may be afterwards changed every day, the rags applied being moistened with weak carbolic acid lotion (No. 9). When the stitches have become loose, they may be removed by cutting the threads.

The patient's bowels should be kept moderately open with Castor Oil or other mild aperients. So long as there is any danger of inflammation he should take no solid food, nor spirituous liquors of any kind, but live on light broth, sago, rice, and similar kinds of mild diet. It often happens that a man in good health receives a wound, and feels so little inconvenience from it that he makes no change in his manner of living ; but after two or three days he is sure to find out his mistake. The time is always saved, and pain avoided, by attending to a wound at once.

In the case of a cut on the SCALP, the hair should be cut off or shaved as close as possible to the extent of an inch or two in every direction round the wound, in order to allow the plaster to stick, and to promote cleanliness ; and cold wet cloths should be applied to the head. All wounds of the head should be carefully attended to, on account of their liability to inflammation, which may be attended with dangerous consequences. In such cases the man must be put on the lowest diet, kept quiet, and the Soothing Mixture (see Receipt No. 5) given regularly.

TORN WOUNDS.

These may be caused by any more or less blunt instrument, such as a nail, a bayonet, a sword's point, or the tooth of an animal ; or by missiles of any kind, such as stones, bullets, fragments of shell, or cannon-shot.


A deep wound of this kind, even though the hole made is a small one, is always more serious than a cut, however extensive. The reason is that the structures through which the weapon passes are crushed in its passage, and must become inflamed and discharge themselves through the narrow hole left open. Therefore it is sometimes desirable, when the wound is not near any vital part, to enlarge its opening both ways with a knife, so as to convert it as nearly as possible into a simple cut. But this must be done with considerable caution. In the case of gunshot wounds it is better not to attempt it.

If a rent or stab of any kind has penetrated the CHEST or BELLY, the patient will be in great danger. In wounds of the chest, if

the lungs are penetrated, which will be known by froth or air escaping from the wound, he must be kept perfectly still, with the injured side downwards, and fed on the lowest diet—weak broth and toast and water—until the breathing becomes easy. If he be a robust man, and the breathing be very much oppressed, with swelling of the veins of the head and neck, it may be necessary to take blood from the arm. He may have bled internally, though very little may have escaped from the wound: this may be suspected to be the case if he becomes very pale and faint without apparent cause. If he appears to be sinking—but not otherwise—a very little wine or brandy in water may be given him. But the main object is to keep his whole body in as quiet a state as possible, so as to avoid anything that may excite a return of the bleeding. His bowels must be kept moderately open; and for this purpose injections are best, if they can be given without disturbing him. He may drink small quantities of iced water, or suck a lump of ice. The wound should be covered with lint kept wet with cold water, so as to exclude the air.

In wounds of the belly, if the bowels protrude they must be gently put back, and the edges of the wound kept together by one or two stitches if necessary, care being taken to allow space for the escape of fluids from the wounds. The patient must be placed with the wounded side downwards, to allow discharges to run off easily. The treatment afterwards must be directed to the object of keeping him perfectly quiet, and avoiding inflammation. If great pain and vomiting come on, and he be a robust man, blood must be taken from the arm. If leeches can be procured, a dozen should be placed over the belly. A piece of flannel wrung out of hot water should be laid over the belly (not over the wound); and Opium is the only medicine that must be given. One pill (No. 39) every three or four hours until he becomes drowsy; afterwards, when the effect of them has passed off, one, two, or three in the day, according to the amount of pain. The bowels will be very costive, but no attempt must be made to get them open. No solid food of any kind must be given. Iced water, or a lump of ice to suck, toast and water, or cold broth by spoonfuls, must

be the only nourishment. The wound should be covered with lint kept wet with cold water.

If a wound of any kind penetrates a **JOINT**, there is great risk of the patient's losing the use of the joint, if not his life. Indeed it has been generally supposed that a bullet-wound of the knee-joint is a fatal injury : but many cases occurred in the late American War which proved the contrary : one case in particular may be mentioned, in which an officer was shot through both knees with the same bullet, and yet recovered with fair use of his legs. Therefore you need not despair of cases of even severe wounds of joints, whether they are clean-cut or torn. The clear gummy fluid which fills the interior of the joint may be seen escaping from the wound, and will inform you at once if a joint has been opened. The ordinary consequences are severe inflammation and swelling, with acute pain, and a copious and exhausting discharge, which often wears the patient out. The first object must be to keep the joint perfectly immovable for about a month or longer ; this is accomplished by laying the limb on a splint, and securing it with a carefully adjusted bandage. The splint must extend nearly the whole length of the limb, and the wound itself should be left uncovered by the bandage, so that it can be dressed without loosening the splint. If the knee is wounded, the splint should be straight, and placed behind the limb : if the elbow, the splint should be shaped like a capital **L**, but with the angle widened a little, (thus ) , and should be placed on the inner side of the limb. The joint is liable to become permanently stiff in a position in which it is placed, so that it is important that it should be placed in the most useful position. The next object is to close the wound if possible, and apply Iodoform (No. 63) or Carbolic Oil (see Receipt No. 14) on lint, and dressed carefully and regularly.

If the wrist-joint is wounded, the whole hand and lower arm must be bandaged to a flat splint. Wounds of the ankle-joint must be treated with an **L** shaped splint fitted to the inner side of the leg and foot. The splints must be padded, as directed under the head of Fractures.

GUNSHOT WOUNDS, in which the bullet has passed out of the body, differ from those caused by other blunt instruments only in the amount of damage done to the structures through which the ball passes. If the bullet remains in the body it is usually an additional source of danger—though there are many instances of men carrying bullets about in them for forty or fifty years without serious inconvenience.

The ball should always be extracted if possible ; but this is usually a task which requires some surgical skill. If, however, you find that you are able to lay hold of it easily with any instrument, you may make the attempt ; or if it lies immediately under the skin, you may cut down upon it very cautiously ; but it is often no easy matter to get out a bullet which seems to lie in your grasp.

The effects of a conical rifle-ball are much more serious than those of a round bullet. The former smashes bones, while the latter frequently glances off them, or only slightly injures them. The former generally passes straight through wherever it strikes ; the latter often runs round the body under the skin, or buries itself at a distance without doing much damage. Injuries to bones by gunshots must be treated like other Compound Fractures, as described under that head.

The hole by which a ball passes out is always larger than that by which it went in.

If a ball or any other weapon enters the skull, death is almost certainly instantaneous.

When a ball passes through fleshy parts without breaking a bone, the chief danger is that some large blood-vessel or nerve may be injured : and even though no serious bleeding may take place immediately, an artery may give way when the wound begins to soften and discharge. The patient should therefore be watched with care. If a large quantity of scarlet blood has come from the wound, and then suddenly ceased, or if there is any other reason to suppose that a great artery has been injured, the patient must be kept perfectly still, on low diet, and a purgative given. If he is a very full-blooded man, and the wound is attended with much throbbing, swelling, and pain, it may be

necessary to bleed him. No wine or spirits must be given in this case: everything must be avoided that might provoke a return of bleeding from the wound.

When the end of a limb has been taken clean off by a cannon-shot, there is not usually much bleeding, because the blood-vessels shrink back among the flesh and close themselves; but there is some risk of their bleeding again when the stump begins to inflame: in that case they must be sought for on the face of the stump and tied. The hot iron is the only other treatment, as it is impossible to make pressure by compresses effectually on the end of a stump.

Pieces of clothing are commonly carried in by the ball; and these, together with splinters of wood, bone, etc., must be removed, if it can be done without violence. The wound sometimes heals over them, and pieces of cloth are sometimes discharged many months afterwards.

Gun-shot wounds are commonly followed by a severe shock, from which the patient sometimes does not recover. Brandy or other stimulants must be given, if necessary, to revive him. The treatment afterwards is the same as that directed for torn wounds of all kinds. (See page 41.)

FRAGMENTS OF SHELL inflict ragged and fearful wounds, also accompanied with severe shock. They must be treated in the same way. The effects of GRAPE and CANISTER are similar to those of round bullets, in proportion to their weight. Grape-shot sometimes lodge themselves in the body. SPENT SHOT or fragments of shells sometimes break bones and reduce the flesh to a pulp (which afterwards mortifies), without breaking the skin.

POISONED WOUNDS.

Severe Poisoned Wounds, whether from the bite or sting of an animal or inflicted by a poisoned weapon, are commonly followed by rapid swelling, numbness, faintness, giddiness, and vomiting; and often by cold sweats, convulsions, and death, or by extensive abscesses.

First endeavour to prevent the poison from spreading, if the

wound has been received within a few minutes. Place a tie round the limb just above the wound. Instantly suck the wound with your mouth; this may be done with perfect safety unless there are any cuts or raw places about your mouth. Then the wound should be thoroughly rubbed with wetted Lunar Caustic; or cut entirely out, if anyone has sufficient boldness and skill; or well burnt with a white-hot iron. A cupping-glass may be used to draw out fluids from the wound. Hartshorn, hot vinegar, or salt, may be applied if nothing else is at hand. The wound should be soaked in hot water to encourage bleeding.

The chief internal remedy relied on in the South-Western States of America for the bite of a rattlesnake is whisky. It is given in enormous quantity—as much as two bottles—without producing drunkenness, and seems to have the power of neutralizing the poison. Any other spirit or wine, whatever may be at hand, should be given plentifully, with water. If the patient cannot swallow, inject spirits and water into the bowels.

Poisoned Wounds of the fingers and toes are more dangerous than those of other parts of the body. The rapidity with which the poison of the rattlesnake or cobra infects the whole system is wonderful. A very few minutes are sufficient.

When the first danger has been averted, the patient's bowels should be opened with two Purging Pills, followed by half an ounce of Castor Oil on the following morning. He may have a good diet, without solids, and some wine daily.

Smaller injuries of this kind, such as the bite of scorpions, centipedes, hornets, bees, wasps, mosquitoes, etc., should be treated by applying Hartshorn or Sal-volatile, Carbonate of Soda or Chalk, or rags wet with Goulard's Lotion (No. 22) or vinegar. If the sting is left in the flesh it must be extracted: a magnifying glass may be necessary to find it. If a man be stung in many places at once he may suffer severe collapse, and require strong spirits and water, or wine. A poultice of Ipecacuanha Powder is strongly recommended by some.

The bites and stings of insects are usually most painful to those who are in the habit of drinking spirits and of eating too much.

BURNS AND SCALDS.

In slight cases the skin is merely reddened. In more severe cases blisters are raised, under which (if they are not opened) a new skin is formed. In the worst cases the burnt part is killed, and separates itself from the body as a dead substance, if the patient lives long enough. If the patient is greatly depressed and stupified by the accident, and feels no pain, it is a bad sign, and you must give him beef-tea and brandy at once ; the burnt part must be kept covered up from the air. If the injury is slight, one of the following remedies will suffice ; a coating of olive oil, or rag spread with fresh lard, or simple ointment, or soaked in Goulard's Lotion, or in a cup of water in which two teaspoonfuls of Carbonate of Soda have been dissolved ; or repeated coatings of flour, or of thick soap-lather. The part may be first soaked in warm water. After four or five days, if the place begins to discharge, it may be dressed with rag dipped in Zinc Lotion. In severe cases the part must be covered with cotton-wool on which Olive Oil, or a mixture of Linseed Oil and Lime-water, has been spread. The discharges are generally offensive, so that the dressings require to be changed often ; but they should not be disturbed unnecessarily, so that the air may be kept from the sore. If portions of the wool stick to the surface they should not be pulled away. A light bandage should be used to keep the dressings in place. The part must be protected from cold.

Never open the blisters. If they break, do not cut away the skin. If there is great pain, a linseed meal poultice on which thirty or forty drops of Laudanum have been sprinkled, may be applied. The wounds are often very long in healing, and are painful and exhausting for weeks or months. In these cases poultices, with a teaspoonful of Olive Oil and ten drops of Goulard's Extract mixed in them, are useful. If the sore becomes very foul, Carbolic Acid Lotion must be freely applied.

The bowels must be regulated, as in all other cases of injury ; and the diet must be light and nourishing.

THE EFFECTS OF COLD.

When a person is exposed to great cold, especially if it be accompanied with wind, and he be fatigued and hungry, he is liable to feel an almost irresistible desire to lie down where he is and sleep. If he does so, he never wakes. The only thing to be done is to struggle against the feeling, and push on for shelter. If one of a party is affected in this way, the others must shake and rouse him, and not listen to his entreaties to be left alone. When shelter is reached, he must not be taken directly into a hot room or cabin, but have his warmth and circulation gradually restored by rubbing his limbs, &c. If this cannot be done, he becomes perfectly pale and cold, the pulse diminishes to a thread, and the breathing becomes faint, and ceases. The limbs are flexible while life lasts.

The cold may affect a part of the body, while the remainder does not feel its influence. This is called FROST-BITE, and often happens to seamen in the North and South Seas, especially if they are natives of hot countries, or have intemperate habits. The signs of it are that the part affected, which is most commonly a finger or toe, or the nose, ears, or lips, becomes first of a dull red, and then of a pale tallowy colour, and is insensible to feeling, and shrunken. The patient is usually unconscious of it, until he is told of it by a comrade. The consequences, if the injury is neglected, are that the part dies, becomes black and gangrenous, and falls off, leaving a ragged sore. Sometimes a hand or foot has been lost in this way.

The best remedy is to rub the part briskly with snow or pounded ice, without a moment's delay. This must be continued until sensation returns. The patient must not be brought near a fire, nor into a warm room. No warm applications must be used until after inflammation has set in, and dead parts have begun to separate. Poultices are then required. When the inflammation has ceased and the wound is clearing, a little Basilicon Ointment spread on lint may be applied. If the sore is sluggish, it may be touched now and then with Lunar Caustic. Give nourishing food

with wine and quinine, and be careful to have the injured part protected from the cold for some time afterwards.

The touch of intensely cold metals, such as frozen quicksilver, has similar effects to that of hot metals.

CHILBLAINS are produced more easily in some persons than others, but most easily in rheumatic persons, by sudden changes of temperature, such as bringing cold feet or hands close to a fire. But they may come on in spite of all precautions. If unbroken, they should be gently rubbed with Turpentine Liniment, Opodeldoc, or Spirits of Wine with Camphor dissolved in it, and covered with flannel. If blisters rise, they must not be broken, but the Liniment should be applied with a feather. When the skin breaks and an ulcer is formed, it may give a great deal of trouble. If there is great pain and heat, poultices must be applied ; but they should be exchanged, as soon as the heat has abated, for Basilicon Ointment spread on lint.

BRUISES AND STRAINS.

When the skin is not broken, and no bone has been injured, the bruised or contused part should be bathed with hot water, and with warm vinegar. Cloths wet with this or with Goulard's Lotion should be applied. If the patient prefers it, the applications may be cold.

Bruises of the head should be carefully watched, on account of their tendency to inflammation, and the possibility of their being accompanied with concussion of the brain. Heavy blows on the SPINE and LOINS are often more serious than wounds, and should be also carefully watched. Either of these injuries may be followed by palsy of the parts below the injured point.

If symptoms of CONCUSSION OF THE BRAIN occur, they always follow the injury immediately. The patient is more or less deeply insensible, and in slight cases can be roused for a moment to answer a question. The skin is pale and cold, the pulse feeble and irregular, and the breathing slow. After a time the patient moves his limbs about and vomits more or less violently, and then

usually recovers his senses. If the pulse and breathing remain very weak for many hours; if the eyelids do not move when touched, and the legs are not drawn up when the soles of the feet are tickled, the case is likely to end badly.

When the patient has recovered his senses one of the following things may occur :—1. **INFLAMMATION OF THE BRAIN.** This rarely appears till a week after the injury, or sometimes later. It is known by a feeling of tightness and pain in the head, quick pulse, confusion of mind, disturbed sleep, want of appetite, and general sickness, followed by burning heat of skin, occasional shivering fits, throbbing at the temples, dry tongue, costive bowels, violent headache, and inability to bear light or sound. The patient often raves violently. If these symptoms are not relieved, the pulse sinks, he becomes insensible, with low muttering delirium, palsy, squinting, or convulsions, and death soon follows.

A part only of these symptoms may occur. The treatment to be adopted consists of perfect quiet of mind and body; free purging; low diet; and cold applied to the head. Put him in as quiet a place as possible, not in a bright light; cut off all his hair, keep his head raised, and apply all over it a bag of pounded ice, or cloths wet with the coldest water procurable. If he can swallow, and is not inclined to sleep, give him ten grains of Dover's Powder every four or six hours, stopping it as soon as he becomes drowsy. Give him also three Purging Pills, followed in two hours by a full dose of Black Draught. If no effect is produced, repeat them. If he cannot swallow, do not attempt to force things down his throat, but give him an injection of a pint of warm gruel or barley-water, with two tablespoonfuls each of common salt, soft sugar, and sweet oil. If the injection comes away without relieving the bowels, repeat it. Soak his feet in hot mustard and water, and keep his body warm. But disturb him as little as possible in applying these remedies. If they fail, put a blister to the head (having previously shaved it) or to the nape of the neck.

2. **PRESSURE ON THE BRAIN,** from blood which has escaped

within the skull. This often comes on after an interval, when the patient has recovered his senses from the first shock. It begins gradually, the pulse being usually full and slow, the skin hot and perspiring, the breathing of a puffing and snoring character, and the pupils of the eyes large and fixed. There is also usually some palsy, and the patient may pass his urine and motions under him. The treatment is the same as in the last case.

3. A condition of semi-stupor, which may last some days, followed by an infirm state of body and mind, with loss of memory and impaired hearing and smell, and a liability to violent excitement from drink or other causes. It is common for the patient to forget the circumstances which preceded the accident, and those which followed his return to consciousness.

In all these cases you should be careful to see that he passes his water freely. If he does not, and a round swelling, caused by the full bladder, can be felt at the lower part of the belly, the water must be drawn off by a catheter. (See Retention of Urine.)

The diet at first must consist entirely of slops. If he is very low, wine or brandy may be given. He must avoid fatigue, hot sunshine, excitement, and drink, for a long time.

ERYSIPELAS, or *St. Anthony's fire*, is very liable to follow blows on the scalp. (See Erysipelas.)

Blows on the CHEST sometimes produce Pleurisy, but they may generally be treated by hot fomentations, rest, and a purgative. Broken ribs must be looked for and treated as directed farther on.

A severe blow on the STOMACH is often followed by immediate death. If the bowels are burst (which may happen without the skin being broken) death almost inevitably follows after a short time. Let the patient lie still on his back, with his head low : give him wine or weak brandy and water every fifteen minutes until he rallies. Keep the feet warm. Give him an Opium Pill every third hour until three have been taken, unless he appears drowsy. Stop the wine as soon as the pulse becomes stronger and the warmth of the body returns, and treat him as directed after Wounds of the Belly, at p. 42.

The SPINE is known to have been injured by the loss of feeling and power of motion below the part struck. The urine and motions will probably be passed without the patient's knowledge. Place a large poultice along the back-bone, and in other respects treat him as directed for blows on the head ; of course applying the remedies to the spine instead of to the head. All these cases are troublesome, and require careful nursing.

Bruises of other parts of the body are seldom followed by serious consequences. If the swelling is very great, a few leeches, if they are procurable, may be applied.

When a joint has been strained, and becomes hot and painful, bathe it in hot water or vinegar, and apply cloths wet with water in which Laudanum has been mixed, in the proportion of one or two drachms to a pint. Use occasionally the Opodeldoc embrocation, or a mixed one composed as follows :—Opodeldoc, $1\frac{1}{2}$ oz., Spirits of Hartshorn, $\frac{1}{2}$ oz., Laudanum, $\frac{1}{4}$ oz. Rub a little of this into the painful part gently, for half an hour at a time, and apply a light bandage.

Immediately on receiving a strain it is a good plan to hold the limb for some minutes in running water.

Complete rest for the limb, regular diet, and opening medicine, are necessary to rapid recovery. After the inflammation has disappeared, if the part continues to feel stiff and weak, pour cold water on it for two or three minutes every morning, and rub it well with a rough towel.

DISLOCATIONS.

A dislocation is the putting a bone or bones out of joint. It is sometimes done by a direct blow, but more commonly by a twist, as in falling when one is tripped up.

In all dislocations it is of the greatest importance to attempt to put the bone in again as early as possible, before the limb has begun to swell. Afterwards, if great swelling and inflammation come on, the patient must be put on low diet and purged, if he be strong enough to bear it ; if he be a very robust man it may be necessary to bleed him.

If there is a difficulty in putting in a displaced bone, the patient should be placed in a warm bath before the attempt is made.

When a dislocation is suspected to exist, compare the injured side with the sound side, and note the difference.

DISLOCATIONS OF PARTICULAR JOINTS.

SHOULDER.—This is more often put out than any other joint. The arm bone is commonly displaced downwards, and its round head can be felt in the arm-pit if the limb be raised a little. At the same time the shoulder is flattened, and a slight hollow may be felt where the head of the bone ought to be, just below the point of the shoulder; the elbow sticks out from the side, and cannot be made to touch the ribs; the arm is slightly lengthened, and the patient is unable to use it. There is considerable pain, which is relieved by supporting the arm.

Let the patient lie down on his back. Sit down beside him on the deck, on the side on which the dislocation is, facing the opposite way to him. Put a towel round the arm with a clove

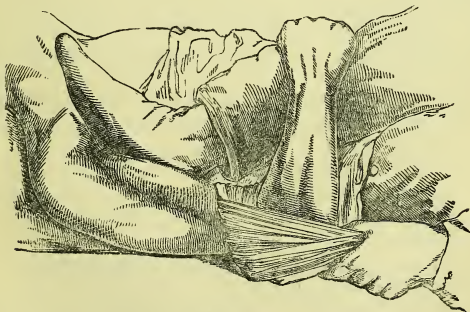


FIG. 8.

hitch, just above the elbow (Fig. 8); put the heel of your foot which is next to his body (with the boot off) into the arm-pit,

and pull slowly and evenly on the arm until the bone goes with a snap into the socket. On comparing it with the sound side you will be easily able to tell whether the bone is in its place again.

Another method is to let the patient sit, pass a jack-towel round his body, close under the arm-pit of the injured side, and make it fast to a stanchion on the other side, so as to keep the body fixed; then pull his arm straight out from his body with a small block and tackle; stand behind him, and help the bone into place by putting your knee under the arm-pit.

As soon as the bone has been replaced in its natural position, put a large wad of tow in the arm-pit, put the arm in a sling, and keep it bandaged to the side for a few days. The accident when it has happened once, is very liable to be repeated; the arm, therefore, must not be used for hard work for some weeks.

The oftener a joint has been dislocated, the more easily it is replaced, and the more readily it slips out again.

Remember, in all cases, a steady and even pull is far more effective than any sudden or violent efforts.

ELBOW.—The fore-arm has two bones, the heads of which, in dislocation of the elbow, are generally driven backwards, and may be felt sticking out behind, while the elbow is bent and immovable. Or one of the bones (the outer one) may be forced up in front of the joint.

Let the patient be seated, and let the upper arm be firmly held by one man, while another pulls the hand straight down. Take hold of the elbow, and try to help the ends of the bones into their places, by pushing them steadily downwards. When the pull has been kept for some time, suddenly bend the arm, without giving the patient warning, and the bones will probably go back into their places.

Put the arm in a sling until inflammation has subsided.

WRIST.—This does not often become dislocated without fracture. The joint is easily seen to be out of shape. It is restored by steadily pulling on the hand.

FINGER.—Often a troublesome dislocation to deal with, especially if not treated at once. Tie a tape with a clove hitch round

the finger, and pull straight down. The end of the bone, which may be seen sticking up (Fig. 9), can be felt to go back into its place.

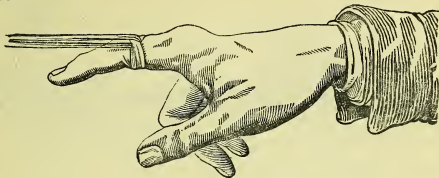


FIG. 9

HIP.—The most usual mode of dislocation is that in which the thigh bone is displaced upwards and backwards. The limb is about two inches shorter than the other, and turned inwards, so that the toes rest on the opposite instep (Fig. 10). The hip is less prominent than the sound one, and the legs cannot be separated. If the patient is thin, the head of the bone may be felt a little behind the hip.

Lay the patient on his back. Make fast the upper end of the limb by a stout jack-towel passed under the fork, and secured to a stanchion behind him. Fasten a small block and tackle to the lower end of the thigh, just above the knee, and let a man pull slowly and steadily. Let the direction of the pull be downwards, inclining a little across to the opposite side (Fig. 11). Put another jack-towel round the upper part of the thigh, and round your own neck, so as to enable you to lift the head of the bone towards its proper place. Let another man turn the foot and leg slightly inwards. After a time the bone will usually go into its place suddenly with a snap.

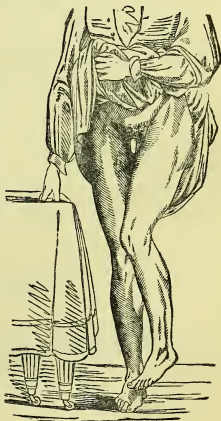


FIG. 10.

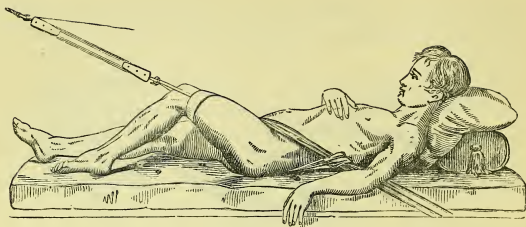


FIG. 11.

KNEE.—The joint itself is seldom dislocated. If it is, the bones can be easily felt to be out of their places, and the leg must be pulled straight down until they come into them. The **KNEE-CAP** is more often thrown out of place, and usually to the inner side of the joint. In this case the leg must be straightened, and held up towards the body, and the knee-cap can then be pushed back into its place with the fingers and thumbs. A straight splint must be kept bound to the limb, behind the joint, so as to prevent the knee from bending for a fortnight or more.

ANKLE.—A jump from a height or any violent wrench may cause this dislocation, and very likely break one of the bones, or drive it through the skin. The shape of the joint is altered, and the foot rendered immovable (Fig. 12). The foot must be pulled

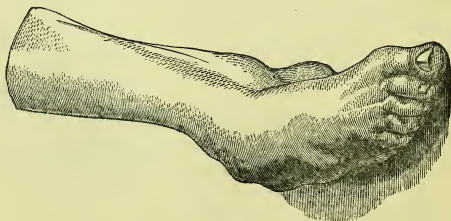


FIG. 12.

steadily straight downwards, and when the bones have returned to their places, the limb must be bound to an L shaped splint, reaching as high as the knee, on the inner side of the leg. Another may be put on the outer side. The knee should remain bent, both during the attempt to put the bones in place, and afterwards. The patient should lie on the injured side.

If the skin is broken by the bones being thrust through it, the case is more serious, and the joint is sure to become inflamed. All dirt must be washed away with warm water, and if any loose fragments of bone are sticking out, they must be gently removed with the fingers. A piece of lint, dipped in the blood, should be placed on the wound, and allowed to stick to it, so as to exclude the air, and cold lotions must be kept constantly applied. The splints should be arranged, if possible, so as not to be over the wound. Care must be taken to keep the foot in good position, like that of the sound side. The diet must be simple, and no wine nor spirits must be given, unless the patient is low. The discharge may probably be exhausting, and the recovery may take many months.

FOOT.—Some of the bones of the foot, or of the toes, may be displaced, and can be set right by steadily pulling in the direction of the length of the foot.

JAW.—If a man receives a blow on the chin when his mouth is wide open, the lower jaw may be displaced. The mouth is fixed open, and the saliva dribbles from it. Wrap several folds of a thick towel round each of your thumbs, and, while the man sits down in front of you, thrust both thumbs as far back as you can upon the lower teeth, and press firmly down, while you press the point of the chin upwards and forwards with your fingers. The jaw goes into its place with a snap.

COLLAR-BONE.—This may be knocked away from its attachments, usually at the inner end. The treatment is the same as for fracture of the bone. (See p. 61.)

FRACTURES OR BROKEN BONES.

A bone is known to be broken by the following signs :—1. It is altered in shape as compared with that of the sound side. 2. Its two parts can be moved upon one another ; that is, there is a joint where there ought not to be one. 3. The broken ends can be felt or heard to grate upon one another when they are moved.

The object to be aimed at in the treatment of broken bones is to replace the broken ends in their natural position, and to keep them there until they have firmly united. They will not unite unless the part is kept perfectly at rest. The time required varies from three to six or eight weeks, or longer, according to the size of the bone and the health of the patient.

A fracture is called **SIMPLE** when the skin is not broken, and **COMPOUND** when there is a wound reaching down to the bone. Compound fractures are much more serious than simple, because the air can get at the broken bone. Therefore in moving a man with a broken limb, be careful to tie the limb to a flat piece of board, or to tie it up in a bundle of stiff straws, reeds, canes, or anything that may be at hand, before you lift him : otherwise one of the ends of the bone may work its way through the skin as you carry him. If a leg or thigh be broken, tie both limbs together, putting a pad between them (Fig. 13), and lay him on the sound side.

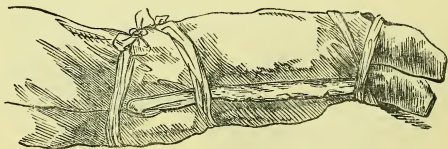


FIG. 13.

SPLINTS are flat pieces of wood padded with tow or any soft material, which are used to keep the broken bone steady during

recovery. Any flat piece of wood, shaped with a knife to the required size, with the corners rounded, may be laid on a piece of cloth, with some tow arranged by it, as shewn in Fig. 14, and rolled up and secured with pins so as to make a very efficient splint.

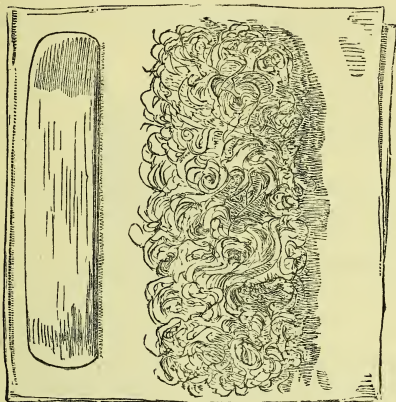


FIG. 14.

No time should be lost in getting the patient into his cot and applying the splints, because the limb very soon begins to swell and become painful, and it is then difficult to get the broken bone into good position.

The limb must be gently straightened and pulled in the direction of its length until the broken bone corresponds in length and position, as nearly as possible, to that of the sound side. The splints should then be applied immediately, after washing the skin with soap and water.

The patient should take a dose of aperient medicine according to his strength, and be put on a light diet so long as the inflammation lasts.

If the bandages or splints are so tight as to give much pain, they must be loosened. The splints may be taken off every few days while assistants hold the limb in proper position. In compound fractures, contrive the splints if possible so as not to be over the wound.

FRACTURES may be distinguished from DISLOCATIONS by noting the following points.

In Fractures.

1. The ends of the bone may be made to grate against each other.

2. The broken bone can be moved about more freely than is natural.

3. The broken bone is usually shortened.

4. When the broken bone is pulled into its proper shape, it loses the shape again as soon as it is let go.

In Dislocations.

1. There is no grating.

2. The displaced bone cannot be moved so freely as is natural.

3. The displaced bone is not itself shortened, though the limb may be shortened on account of its displacement.

4. When the displaced bone is pulled into its proper place it remains there.

These points of difference are important to remember when the fracture is very near a joint. But a joint may be dislocated and one of the bones fractured at the same time. In that case the fracture must first be put up in splints, and the dislocation then set right if possible without delay.

COLLAR-BONE.—Commonly broken by a fall on the shoulder. The patient cannot lift the arm, and supports it at the elbow. The shoulder sinks a little inwards, and one of the broken ends can be felt sticking up. Put a pad under the armpit, and fasten a figure-of-8 bandage over both shoulders, so as to keep them well back. Put the arm in a sling, and tie it to the body. (Fig. 15.)

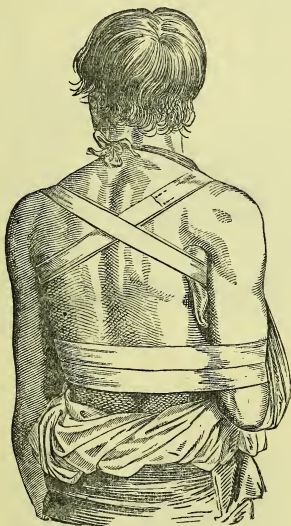


FIG. 15.

UPPER ARM.—The fracture is easily recognised. Put splints in the inner and outer sides of the arm, after having drawn the bone into proper shape ; bend the elbow ; bind the arm to the side ; and

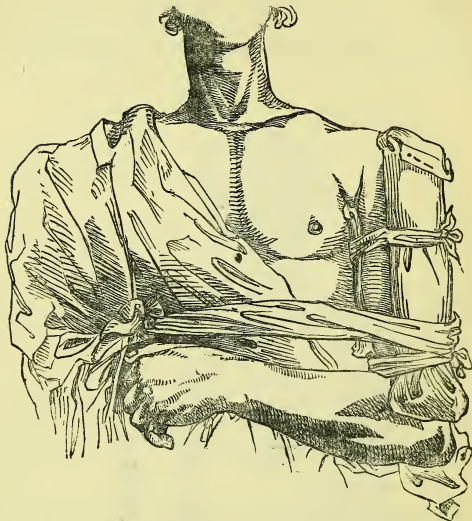


FIG. 16.

support the fore-arm and hand with a sling, taking care not to hold up the elbow. It will be better to put a bandage on the hand and fore-arm to diminish swelling. (Fig. 16.)

FORE-ARM.—One or both bones may be broken. Bend the elbow, and bring the fore-arm across the body. Put a splint on the inner side reaching from the elbow to the fingers, and one on

the outer side not quite so long. Put the arm in a sling. The fore-arm may be broken about an inch above the wrist, so that it



FIG. 17.

may be difficult to tell whether the wrist is not dislocated. The part will have the appearance shewn in Fig. 18.



FIG. 18.

In this case, draw the bones into place and proceed as above directed, except that the outer splint should be longer than the inner, and shaped like the handle of a pistol, thus, the hand being bound to the bent part :—



FIG. 19.

HAND.—If any of the bones of the palm are broken, the hand must be placed on a splint ; a finger or thumb, when broken, must be secured with little splints made for it.

THIGH.—The man is unable to stand or to lift the limb. The pain is great, the foot is turned outwards, the heel resting behind the ankle of the other leg ; and the grating of the ends of the bone can be felt or heard. Rapid swelling of the limb, and especially of the foot, follows.

The best remedy is the long splint, (but it must not be applied if the patient is very old and feeble ; nor until he is sober, if he happens to be drunk at the time of the accident). Let the carpenter prepare a long strip of wood of a hand's breadth, as shewn in Fig. 21, reaching from the armpit to a few inches below the heel, with two holes through it near its upper end, and two deep notches in its lower end. Let it be well padded, and lay it on its edge alongside the injured limb. Draw the foot steadily down into good position, so as to correspond with the other, and make it fast with a handkerchief (if you have no bandages at hand), to the notches in the lower end of the splint (Fig. 20). Then put a well-padded band or handkerchief under the fork, pass the two ends through the holes in the splint, and tie them tightly with a slip-knot, so that you may be able to slacken or tighten them

FIG. 21.

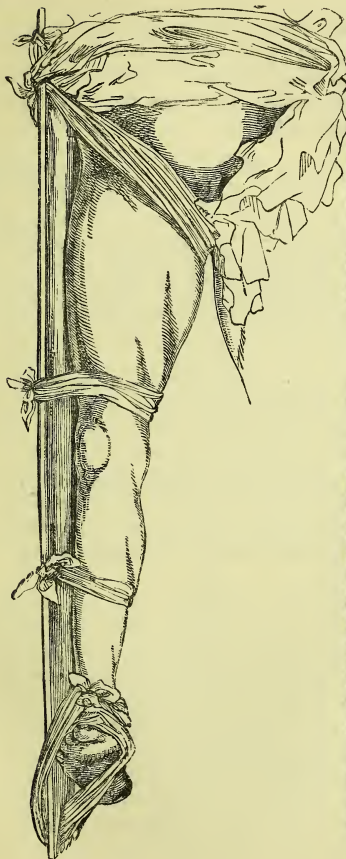


FIG. 20.



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afterwards as required. If this has been properly done the limb will be kept well stretched out, and the bones in good position. In an emergency, tie a couple of handkerchiefs round the limb and splint above and below the knee to steady it ; but it will be better to apply a bandage carefully over the whole limb from the foot upwards, as shewn in Fig. 22. This keeps all steady, moderates

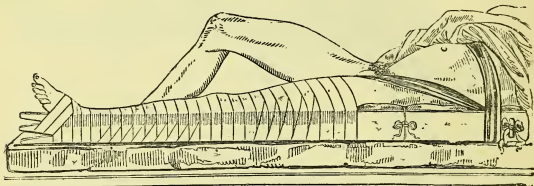


FIG. 22.

swelling, and tends to prevent starting and jumping of the limb. Lastly, keep the top of the splint in to the patient's side by a broad band passed round the body and fastened to the splint. The long splint must be kept on till the bone has united, which will not take less than six or eight weeks. During its use the state of the heel and ankle, which are liable to be chafed by the splint, must be carefully looked to, and the padding must be arranged so as to take pressure off them. You must also be on the lookout for bed-sores.

It is often difficult to distinguish between a fracture of the thigh-bone close up to the body and a dislocation of the hip-joint. If, therefore, after making a careful and steady effort to get the bone into its socket as before directed, you produce no effect, and are in doubt as to the nature of the injury, it will be better to wait until you can get good surgical advice, before making further attempts which might do harm.

A patient with a long splint on, obviously cannot lie in a hammock. In a bunk the bones are affected by the motion of the ship, and do not unite readily ; he should therefore be slung in a cot with a good mattress in it, at all events, so long as the anchor

is up. The same applies to all broken bones, and all cases where the parts require to be kept steady. Sand-bags laid at the sides of the limb will also be very useful.

Persons who cannot bear confinement by the long splint must have four short splints placed along the thigh, at front, back, and sides, and must lie on the injured side with the knee and the thigh drawn up towards the belly.

KNEE-CAP.—The small round bone on the top of the knee may be broken across, a gap being felt between the two pieces. Put a straight splint two feet long behind the knee, and bandage the limb to it, keeping the knee uncovered. The muscles have a tendency to pull the pieces asunder, therefore the limb must not be used for many weeks. If the pieces do not grow together either by bone or sinew the man will be lamed for life. His body should be raised into a half-sitting posture, and the limb should be also raised, so as to relax the muscles.

LEG (see Fig. 13).—There are two bones in the leg, one of which is much smaller than the other. The small bone may be felt on

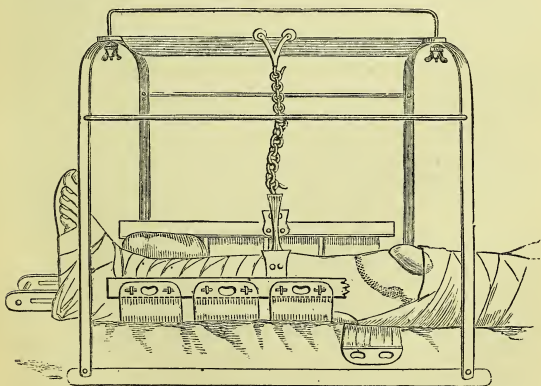


FIG. 23.

the outer side of the limb, its lower end forming the outer projection of the ankle. If both bones are broken (in which case the limb will probably be shortened), they must be put into position by steadily pulling at the foot, keeping the great toe in a line with the inner part of the knee ; a "tailed bandage," Fig. 32, p. 76, may be applied, the tails being moistened with water. A splint should then be put on each side of the leg and foot, as high as the knee, or the limb may be put in a trough-shaped metal splint, as in Fig. 23, the object in both cases being to keep the bones in good position, and to prevent the limb from becoming shortened by the ends riding over one another. Fig. 23 shews a plan for slinging the broken limb which is much used on shore ; and you will have little difficulty in contriving something similar for use on board ship. The limb is laid in a trough-shaped splint, which is supported by bands of canvas passing under it and fastened to a long stick on each side, which is slung to a "cradle" standing on the bed. The sides of the cot will enable you to do without the cradle. The weight of the bedclothes should in all cases be kept off the foot, whether you sling the limb or not. The patient should lie on his back for the first ten days. Afterwards he may be put on his side with the knee bent. The splints and bandages should be re-adjusted every third day, or oftener if they become displaced or give pain. Each side-splint should have a large hole cut in it opposite the ankle, so as to relieve it from pressure.

If the large bone only is broken, proceed in the same way. Keep the splints on for six weeks. The small bone may be broken without the large one. This very often happens when the ankle is dislocated (see Fig. 12), the fracture being then about four inches above the ankle. But it may be broken in any part by a blow. The grating of the ends may not be easily detected, but there will be a tender spot at which pain will be caused by pressing on the bone at some distance. Put one straight splint with a double pad at its middle on the inside of the limb, and bandage the foot and leg to it (Fig. 24). Keep it on for five weeks.

Foot.—If the bones of the foot are broken, the whole foot is probably crushed at the same time, and amputation may be the

only remedy. But you must endeavour to save as much as possible of the foot. Remove loose pieces of bone, keep water-dressings, with Carbolie Acid lotion, constantly applied, and when abscesses form open them with the lancet. Most of the injured

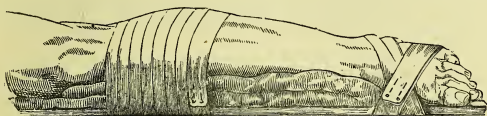


FIG. 24.

parts will probably slough away. The patient's strength must be kept up with nourishing diet and wine according to circumstances. In severe cases recovery is very tedious.

RIBS.—If a man after receiving a blow on the chest, or being violently squeezed, has a fixed stabbing pain at one point which is much increased by coughing or taking a deep breath, he probably has one or more broken ribs. If he or others can feel grating of the bones, the case is clear, but this cannot always be detected. If a point of bone has been driven into the lung he will spit more or less blood, and air may escape into the chest so that it sounds like a drum, or may escape under the skin and puff it out.

The treatment is to wind a broad flannel bandage tightly round the chest from the armpits to the lower edge of the ribs, so as to prevent them from moving. Avoid anything that would in the least degree hurry the breathing. Give an aperient, and keep the patient in bed for a few days, to avoid risk of inflammation of the chest (see p. 123). Some shoulder-straps should be fastened to the bandage to keep it from slipping down.

JAW.—Irregularity of the line of teeth, pain, swelling, and grating will enable you readily to detect a fracture of the lower jaw. Take a piece of pasteboard, gutta-percha, or stiff felt, about eight inches by four, and mould it accurately to the shape of the jaw, softening it if necessary in hot water. Put the broken bone into its natural shape, apply the casing you have made to the chin, and tie it up firmly with a broad piece of linen, slit at both ends,

so as to make a four-tailed bandage. The two hinder tails are to be tied on the top of the head to keep the jaw up; the two forward ones round the back of the head to keep the jaw back. (Fig. 25.) You may put a thin piece of cork between the back teeth on either side if necessary. If pasteboard or gutta-percha are not at hand, Plaster of Paris may be used, as directed in No. 74.



FIG. 25.

Nose.—The bones of the face and nose may be broken by a blow. If the nose is flattened, put a quill or smooth stick into the nostrils, and raise the bones to their natural position. They will usually keep up without support. These injuries are often followed by great swelling and inflammation, which may require low diet and bleeding.

SKULL.—A sharp edge of bone, whether covered by the skin or not, and a slight hollow near it, indicate that the skull has been broken and a piece knocked in, so as to press on the brain. The patient is usually insensible, and palsied (sometimes only on the side opposite to the injury). The pupil of the eye is large, and

does not move with light. The urine is not passed at all, and the motions escape from the bowels. The skin is often hot, and the breathing of a snoring or puffing character. The pulse is slow.

These symptoms may be present in various degrees. If they are very slight, the patient should be purged and kept on low diet, with the head cool, and he may get well. If he is a full-blooded man he must be bled, unless he has lost much blood from the wound, which will do him good. When the case is a bad one, you must endeavour to raise the broken piece of bone to its proper level by getting some flat instrument like the handle of a teaspoon under its edge. Shave the scalp, and apply cold lotions or ice to it. Put the feet in hot mustard and water. Be careful in all cases to draw off the urine with the catheter night and morning, because the bladder is usually palsied, and cannot expel its contents.

The skull may be broken on the under side where it joins the spine, if the man has fallen on his head. In this case there will most likely be bleeding from the ears and nose, and perhaps a clear fluid may escape from the ears in great quantity. Some of the senses will be more or less affected.

The prospect of recovery is small if the skull is badly broken ; but the result of all injuries to the head is very uncertain. Sometimes death follows a comparatively slight injury, while in other cases men recover even after portions of the skull have been lost and some of the brain has escaped. If any substance has lodged in the brain the man will almost certainly die. A bullet entering the skull usually kills the man on the spot. All cases of injury to the head require good nursing and careful watching.

In the treatment of simple fractures of the fore-arm and leg, Plaster of Paris can be advantageously used instead of wooden splints. See No. 74.

BANDAGING.

The usefulness of a bandage depends entirely on its being properly applied. If it is too slack or too tight, or roughly or

unevenly applied, or put in the wrong place, it will do no good, and may do much harm. A description of the mode of applying various bandages will therefore be found useful.

The chief uses of bandages are, to keep on dressings ; to protect an injured or diseased part, and to keep it quiet ; to give support to relaxed or strained sinews and vessels ; and in some cases to moderate swelling.

In bandaging a limb, hold the bandage, which should be tightly rolled up before you begin, between the thumb and fingers, as shewn in figures 27 and 31. Begin at the lower end and bandage upwards, passing the bandage from one hand to the other as you put it round the limb. Unroll very little of it at a time, and let each fold overlap about a third of the previous one. Where the limb increases in size the bandage must be turned on itself as in figures 28 and 32, care being taken to prevent any hard folds or edges from pressing on the skin. Make the bandage fit the limb as smoothly as possible, and let it be rather less tight at the upper end than at the lower. The engravings will assist you more than any description.

BANDAGE FOR THE FINGER.—A narrow strip of linen, about an inch wide, is the most convenient. Split the end of the bandage into two tails, and turn one of them round the finger the opposite way, so as to tie the two in a bow or slip-knot.

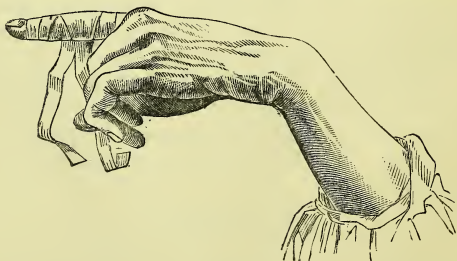


FIG. 26.

For the **HAND**.—Wind a bandage about two inches wide as often as required round the hand, and in a figure-of-8 across the back of the wrist, finishing with one or two circular turns round the wrist. Fasten it with pins.

For the **FORE-ARM**.—Begin by applying it round the hand and wrist as just described : then continue it up the fore-arm to

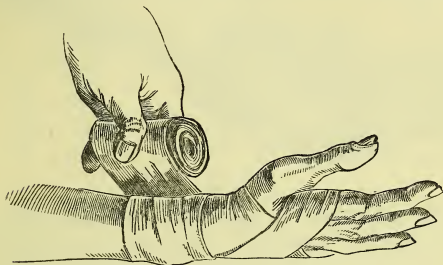


FIG. 27.

near the elbow, turning the bandage on itself as often as required to make it fit close to the limb.

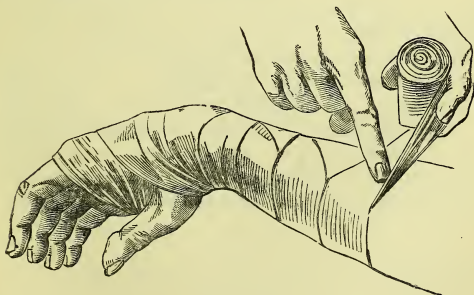


FIG. 28.

For the **ELBOW**.—Fig. 29 represents the mode of bandaging the elbow after bleeding a man, the thumb of one hand being pressed

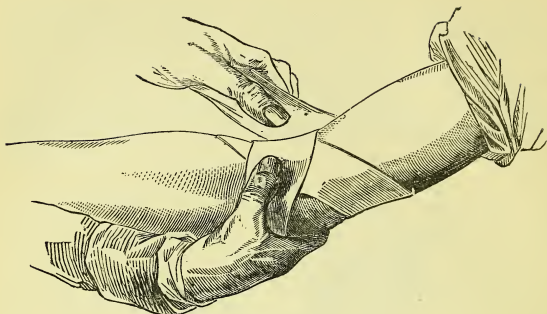


FIG. 29.

over the wound made by the lancet while the bandage, with a pad of lint under it, is being applied. The same way of putting on the bandage can be used when it is desired to support the joint or to keep on dressings. The point of the elbow may be left uncovered, the bandage being placed in a figure-of-8 form round the joint.

For the UPPER ARM.—There will be no difficulty in applying the bandage, turning it when required as in Fig. 28. If it has a tendency to slip down, it may be fastened to a band put round the neck and crossed over the shoulder.

For the ARMPIT.—A convenient way of keeping on dressings, &c., is to put the middle of a common handkerchief or piece of linen folded cornerwise under the armpit, cross it over the shoulder, and carry the ends across, one before and the other behind the chest, and tie them under the opposite armpit. (Fig. 30.)

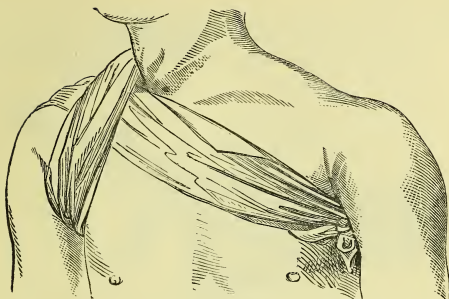


FIG. 30.

For the FOOT.—Wind a bandage about three inches wide round the middle of the foot ; then bring it up on the inner side, across the instep, and round the ankle and foot in a figure-of-8, as shewn in Fig. 31. It should be turned several times round in this way, and then fastened round the ankle.

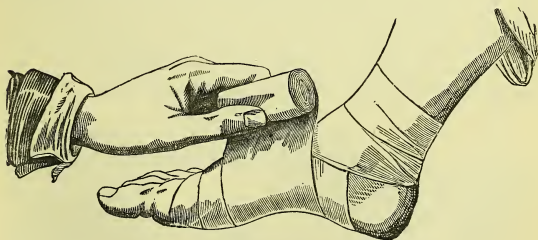


FIG. 31.

For the LEG.—After covering the foot and ankle smoothly, continue the bandage up to just below the knee, turning it over as often as necessary to make it fit the calf. If the limb is a large one this will require some care. (Fig. 32.)

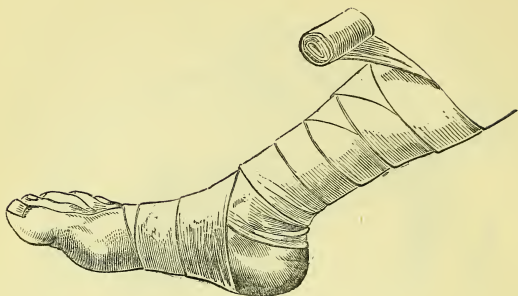


FIG. 32.

The "tailed bandage" is an old but sometimes useful contrivance for avoiding disturbances of the limb. A piece of bandage about $2\frac{1}{2}$ feet long (for the leg) is laid on a table, and a number of other pieces long enough to reach once and a half round the limb are laid across it and sewn to it by their middle. They are laid on beginning from the top, and overlap one another about half their width. There must be enough of them to reach from the knee to the ankle when placed under the limb; and the end of the long piece must be passed under the sole of the foot, and brought up on the other side, as in Fig. 33. The tails are wetted

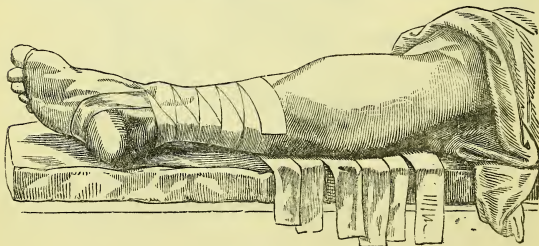


FIG. 33.

and folded smoothly one after another round the limb, beginning from the ankle. The advantage of the plan is that the bandage can be unfolded and replaced without moving the limb.

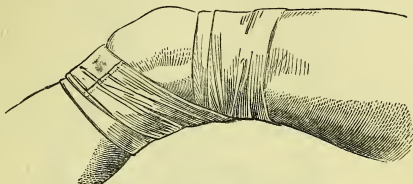


FIG. 34.

For the KNEE.—To support the knee in ordinary cases, a bandage may be put round it in figure-of-8 form, leaving the knee-cap uncovered, as in Fig. 34. When dressings have to be kept on a wound, or poultices, &c., applied, take a piece of linen about a yard and a half long, and 8 or 9 inches wide, and split it up the middle from each end, leaving 8 or 10 inches undivided in the centre. Put the centre on the top of the knee, cross the four tails underneath, and tie them two and two above and below. (Fig. 35.)

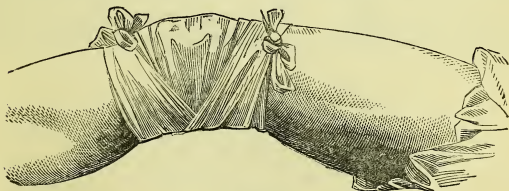


FIG. 35.

For the THIGH.—If a bandage is required to be placed on the thigh alone, it must not be very tight, lest it should cause swelling of the leg and knee. If the patient is moving about, it must be prevented from slipping down by being fastened to a band passed round the body. There will be no difficulty in putting it on.

For the GROIN.—Pass the bandage once round above the hips, and tie or sew it. Then bring it in front of the groin, round the

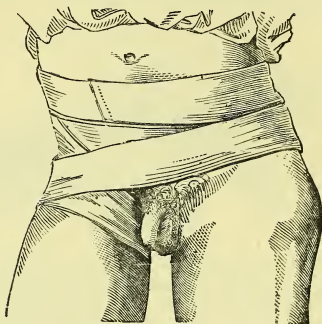


FIG. 36.

upper part of the thigh, and again round the body. Make two or three turns in this way, and make them lie as smooth as you can. (Fig. 36).

For the FORK.—If it is necessary to apply dressings or pads, &c. under the fork, as in cases of piles, wounds, &c., a bandage must be contrived suited to the particular case, on the plan of Fig. 37.

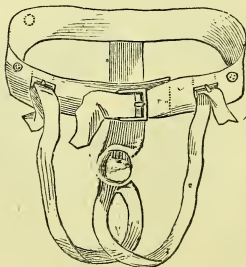


FIG. 37.

A broad belt is to be put round the body, from the back of which a strip hangs down and is passed between the legs. The front end of this strip is divided into two, which are brought up and fastened to each side of the front of the belt. If the belt slips down, straps may be attached to it and passed over the shoulders.

For the HEAD.—Wind a bandage round from the forehead to the back of the head two or three times, and fasten it by a pin or a stitch over one ear. Then carry it over the top of the head and under the chin a few times, and fasten it over each ear. (Fig. 38.)



FIG. 38.

Another mode is shown in Fig. 39. A piece of linen, split at both ends as directed in the case of the knee, is laid on the part of the head required to be covered, and the pairs of tails tied separately; the hinder pair brought down under the chin, and the forward pair under the back of the head and round the neck.



FIG. 39.

DISEASES THAT MAY FOLLOW WOUNDS AND OTHER INJURIES.

INFLAMMATION.

Every wound or injury is usually followed by more or less inflammation, which shews itself by increased heat, redness, swelling, and pain of the part. The treatment of simple inflammation is described on pages 39 and 40, and the instructions there given apply to all simple cases. But if inflammation is very severe, or the patient's health is low, one of the following consequences is liable to occur, viz. :—**ABSCCESS**, or gathering ; **BED-SORES** ; **GANGRENE**, or mortification ; **Poisoning of the blood by matter**, called by surgeons **PYÆMIA** ; and **ULCERS**.

An **ABSCCESS**, or gathering, may form after long-continued inflammation of a part ; or it may follow rapidly after a blow or strain, especially if any dirt or other substance has become embedded in the flesh or skin ; or it may appear without anything to account for it. It is at first a hard lump, hot and painful, but after a time the inside of the swelling softens, and matter is formed. Usually the skin may be felt to become thin and soft at one particular spot on the swelling, where the matter is said to "point," and if a lancet (see page 20) is thrust into it at this spot the matter is discharged, and much pain and loss of time avoided. If this is not done, the abscess at last bursts of its own accord. An attack of shivering usually occurs at the time when matter begins to be formed, if the abscess is large. When you open a large abscess take care to make the cut as near as you can to its lower side, to allow the matter to drain away. Do not squeeze it violently to press out the matter. If an abscess extends itself at the sides after matter has begun to form, it should be opened as soon as possible, if a place can be found where the skin is thin.

POULTICES of linseed meal, changed often, are the best application to abscesses, both before and after opening. Leave them off when the skin and wound begin to look sodden, pale, and flabby. Cut away loose dead skin, and apply a pad of lint and a bandage. A little Basilicon Ointment may be spread on the lint.

Avoid making deep cuts into abscesses of the throat, armpits, or groin, for fear of wounding the great blood-vessels. If you are doubtful whether a swelling contains matter, prick it with a needle before using the lancet. If a drop of matter escapes there is no doubt of its nature. In opening abscesses of the limbs, make the cut in the direction of the length of the limb, not across it.

Keep the patient's bowels open, and support his strength, if necessary, as directed at pages 41 and 42.

A BOIL is a small abscess, and must be treated in the same way as a large one. They often come out in crops, and give great pain and annoyance. Sailors are very liable to them. The pain of large boils is greatly relieved by opening them early, and poulticing. Basilicon Ointment is useful for dressing them after they have burst.

If a man is out of health, and suffers much from them, give him a dose of Effervescent Mixture (see No. 3, page 1,) twice or three times a day, and two to five grains of Quinine every morning, or Receipt No. VIII.

CARBUNCLE is a more serious disease—something like a very large boil, and is usually found on the back, buttocks, or nape of the neck, sometimes on the face. It is a sure indication of debility, and should be carefully treated with nourishing diet, plenty of fresh air, and the Tonic Mixture (see Receipt No. VIII.). At the same time the carbuncle should be poulticed with linseed meal, and freely opened with a lancet by a crucial incision, thus +. When the slough is separated, which it will do in time, dress the large sore with Carbolic Oil, No. XIV., or Basilicon Ointment, No. 31.

If very painful, add a little laudanum to the poultice.

A WHITLOW is an abscess among the tough structures of the finger, and is very painful and liable to destroy the bone. It is

commonly caused by a blow, or a rusty nail or splinter. The rule of treatment is—cut deep, and cut early. When the finger is red and swollen, and the skin tight and shining, and when a brisk purgative, such as two pills (No. 40), followed by a black draught (No. 4), produces no effect on the swelling, make a deep cut with a lancet down the middle of the front of the finger down to the bone, and if the hand is inflamed also, continue the cut down to the front of the knuckle where it joins the palm. This will let out the matter, and give the best chance of saving the finger. Put on a warm poultice, and let the wound discharge into it.

A GUMBOIL is a small abscess of the gum, caused by a bad tooth, or by a cold. When a tender swelling is found between the gum and the cheek, open it with a lancet, and you will give immediate relief from the pain, which is often very severe.

BEDSORES are raw places produced by lying a long time in one position. They are usually formed over the points of bone on which the weight of the body rests, as on the lower part of the back-bone, the hips, and shoulder-blades. When a patient is likely to lie long in bed, these parts should be rubbed now and then with brandy, and if the skin is red it should be protected with sticking-plaster, or Basilicon Ointment spread on lint. Pillows, pads, or air-cushions, or ox-bladders partly filled with water, should be arranged under him so as to take the weight off the sore parts, and the condition of the skin should be frequently examined. When bed-sores form, the strength of the patient is almost always much reduced, and beef-tea, wine, and quinine are required. He must be kept very clean, and foul discharges and urine must be prevented from touching the skin. Poultices of Linseed Meal mixed with powdered charcoal, and Basilicon Ointment, are the best applications after the skin is broken. Blows on the spine are very liable to be followed by bed-sores.

GANGRENE, or MORTIFICATION, is the death of some part of the body. It is produced if the blood is prevented from circulating in any part, as by a string bound tightly round a limb; or by excessive inflammation, or severe bruises, lacerations, burns, or extreme cold. It most commonly appears as a black spot on the skin, which

rapidly spreads : and if it is not stopped, may soon affect an entire limb or part of the body. The dead skin is discoloured, dry, and leathery, and that round it is red and shining. The discharge has a peculiar foul smell. The appearance of Gangrene is generally accompanied with a low fever, with rapid pulse, foul tongue, and haggard countenance ; and there may be vomiting, hiccup, and delirium. If it appears among a number of wounded men, the patients suffering from it should be separated from the rest as soon as possible, as it is very liable to spread : and the strictest attention should be paid to the rules on page 28, for the prevention of contagious diseases.

The treatment must be directed to the object of stopping the spread of the Gangrene, and obtaining the separation of the dead parts, so as to leave a healthy wound. If the skin only, or the surface of a wound, is affected, you may stop the spread of the disease by rubbing a stick of Lunar Caustic on the skin, so as to draw a line quite round the wound about half an inch outside its edges. It must be well rubbed in, so as to cauterize the skin thoroughly. The caustic should also be well rubbed into the surface of the dead skin, or slough, as it is called, or the hot iron may be used to destroy it. If a limb has mortified, the best thing to be hoped for is the formation of a distinct line round it, at which nature will separate the dead part, and throw it off.

If the disease begins with headache, vomiting, fever, and a highly-inflamed state of the wound, a purgative should first be given ; after which beef-tea, brandy, wine, and quinine are the most effective remedies. The patient is liable to sink from the quantity of foul matter discharged from the wound ; or if the wound is dry and does not discharge at all, the system may be poisoned by the matter being retained. Poultices of Linseed Meal mixed with Powdered Charcoal, a little Oil of Turpentine, Basilicon Ointment, or Peruvian Bark, should be applied to the wound. When the slough has separated, cold water dressings, or a little Friar's Balsam (No. 21) may be used. An Opium Pill (No. 39) should be given at night, and repeated every three or four hours, if necessary, to relieve pain and procure sleep, and a drachm of

laudanum may be mixed in the poultice ; but if the patient becomes drowsy they must be left off, and if the bowels are costive a dose of Castor Oil must be given.

POISONING OF THE BLOOD BY MATTER may be suspected to be taking place, if a patient after a wound or injury is seized with severe shiverings, with quick pulse, anxious countenance, feeling of weight at the chest, low spirits, headache, dry tongue, want of sleep, and inclination to vomit ; especially if at the same time any discharge from his wound ceases.

In some cases he becomes stupified and sinks rapidly. In others he is relieved by vomiting and purging of great quantities of dark bilious matter ; or the head, chest, or belly may become the seat of inflammation, or an eruption of boils may follow ; and lastly, and most often, large abscesses may form in various parts of the body, sometimes with great suddenness, either in the limbs or inside the body. A rapidly increasing swelling may appear on some part of the limbs or trunk, the skin over it looking puffy, and feeling quaggy when pressed by the fingers. The pain is always severe : the patient is usually parched with fever, and in bad cases sinks into a state of low delirium, followed by death. There may be also profuse diarrhoea, which the Powder (No. 16) fails to check.

The treatment is directed to keep up the patient's strength, to enable him to throw off the poison. Wine, brandy, beef-tea, and quinine are necessary, and often opium also. The bowels must be regulated if possible, and collections of matter near the surface must be let out with the lancet. If a wound which has become dry begins to discharge cream-coloured thick matter again, it is a good sign. The discharge must be encouraged by poultices. Severe pain in any part distant from the wound must be treated by turpentine fomentations (No. 51) or mustard poultices.

Wounds which have been poisoned by the touch of dead animals, or by glanders, or by snake-bites, are most liable to produce these effects.

ULCERS are cavities produced by the softening and breaking away of the natural skin and flesh. They vary extremely in severity—those which spread very rapidly being called sloughing

ulcers, and those which last for years, with little change, being called Chronic or indolent ulcers. They may occur in almost any part of the body. Sloughing ulcers differ little from Gangrene, and should be treated in the same way. They usually occur in unhealthy persons, after injuries ; or they may appear in the throat after scarlet fever ; or the venereal disease, if unusually virulent, may produce them in people of dirty habits. Indolent ulcers most commonly occur on the legs, where they are connected with veins which have become enlarged and knotty. A small scratch on the leg received by an old person with his veins in this state is very liable, especially if neglected, to produce an obstinate ulcer : and the older the ulcers, the more difficult are they to heal. Therefore in such persons, especially if they are of intemperate habits, injuries to the skin of the legs must be looked to at once. The patient must not walk on the limb, but must rest with it raised. His diet must be very plain, without spirits, wine, or beer, and his bowels must be kept slightly open with Jalap and Epsom Salts, until the wound, which must be poulticed or dressed with Goulard's Lotion (No. 22), has ceased to look inflamed. Then put a small piece of lint, spread with Simple Ointment (No. 33) or Carbolic Oil (see Receipt No. XIV.) over the sore, and put on strips of adhesive plaster, about an inch wide, and long enough to go more than half round the limb, drawing the edges of the sore a little together. This will assist in filling up the cavity. The limb should be well washed, and hairs shaved off before the plaster is applied. Then a small linen pad may be put on the plaster over the sore, and a bandage carefully applied from the foot upwards.—(See Figs. 31 and 32, pages 75 and 76). If the patient will not keep his limb raised and at rest during the process of healing, he must be kept in bed.

Ulcers of other parts, when inflammation has subsided, must be treated in the same way. If the new flesh forming on the surface sprouts too high above the edge of the wound, it may be touched with Lunar Caustic : and if the sore simply remains without change, discharging a thin matter, in which state it is called a callous ulcer, it must be treated with stimulant dressing, such as

a poultice with a little Oil of Turpentine mixed in it, or Basilicon Ointment.

If the discharge from an ulcer scalds and irritates the neighbouring skin, a lotion of a wineglassful of spirits, mixed with three times as much water, should be applied with lint, and changed three or four times a day. Magnesia (No. 29) may be sprinkled over and round the sore.

The treatment of ordinary ulcers does not differ from that of other wounds. In all cases regard must be had to the state of health and strength of the patient. If he is of too full habit, he must be lowered; if he is feeble,—especially if he has suffered at all from scurvy,—proper food and drink will be necessary to recruit his strength.—(See SCURVY).

It is sometimes dangerous to heal old ulcers of the legs quickly, on account of the risk of bringing on affections of the head; and men suffering from them should never be taken to sea as part of a ship's company.

Persons who allow the skin of their legs to remain always in a filthy state, cannot be surprised to find that its vitality, or power of resisting disease, is impaired. Thorough cleanliness contributes more than anything else to produce a healthy state of the skin, and to preserve it from ulceration.

A spreading ulcer may lay open one of the large veins in its neighbourhood. This happens most often on the legs. A finger must be pressed on the bleeding point, and the patient must lie down with the leg raised. When the bleeding, which is often dangerous, has been stopped by these means, the limb must be bandaged and kept cool by Goulard's Lotion, or weak spirit and water.

ERYSIPELAS, or ST. ANTHONY'S FIRE, is a rapidly spreading inflammation of the skin, extending more or less deeply from the surface. If the surface only is affected, there will be little swelling, and the redness of the skin will disappear for a moment if it is pressed by the finger. If the inflammation extends more deeply, there will be much swelling, which will become soft and quaggy, and matter will be formed. When this latter kind of

inflammation extends over a large part of the body, the patient is in great danger. It generally begins in the neighbourhood of wounds, but may attack sound parts. The face, head, and throat are most liable to it.

Dissolve half a drachm of Nitrate of Silver (Lunar Caustic, No. 28, page 5) in three ounces of distilled or rain water, and paint the fluid with a feather over the whole surface that is inflamed, taking care not to let any of it get into the eyes, ears, &c. The fluid is a powerful caustic, and will turn the skin black. Do this as soon as you discover a red shiny spot of the skin which is spreading rapidly, and repeat it often until the skin is black. You may in this way, probably, stop the disease.

The part should be well covered with cotton-wool, tow, or any similar substance. The feverish state which accompanies Erysipelas must be treated with a mild purgative (No. 4, 10, or 41) followed by effervescing draughts; the diet must be very simple, consisting of broth, beef-tea, sago, &c., lemonade, barley-water, or Cream of Tartar (No. 11) dissolved in water, one drachm to a pint; no spirits, wine, or beer. If the patient is young and full-blooded, and the attack very severe, it may be necessary to bleed him. If the pain be great, a drachm of Spirits of Nitre, with ten drops of Laudanum in a tablespoonful of water, may be given, and repeated in three or four hours.

When matter has formed, or when there is any appearance of mortification, it will be necessary to support the patient's strength with wine, brandy, and quinine, as directed under 'Gangrene.' In all cases quinine may be given with advantage as soon as the Fever is abating.

Erysipelas is highly contagious; the patient must therefore be separated immediately from others, especially if they have open wounds. Men recovering from it must not be exposed to cold or wet, or it may return worse than before.

LOCK-JAW, or TETANUS, is most commonly produced, especially in hot climates, in men who have been exposed to cold and damp after receiving lacerated wounds. It is very common among wounded soldiers if they have been left on the field all night after

a battle. Severe burns, or injuries which have torn the muscles and sinews of the limbs, are most liable to be followed by it ; but it may come on after a finger has been scratched by a rusty nail, and after the scratch has nearly healed. Therefore, be very careful to notice the first signs of lock-jaw, and to lose no time in treating it ; for if the disease is once fully established, there is but a small chance of recovery.

The patient first complains of stiffness and pain of the neck and jaw, as if from a cold ; his voice is husky ; he has difficulty in putting out his tongue ; and the corners of his mouth are slightly drawn outwards, giving an appearance of a painful smile. Swallowing soon becomes difficult and painful (especially with fluids), and all the muscles of the jaws become contracted, so that the teeth cannot be separated. There is pain at the pit of the stomach, shooting through to the back ; the breathing becomes spasmodic or catching ; the belly is hard as a board, and the bowels obstinately costive ; and convulsive movements begin to be felt in the muscles of the limbs, with great pain. If the disease goes on, the contractions of the muscles produce arching of the back, the body resting on the head and heels ; or the body may be bent forward. There is a feeling of suffocation, and the saliva dribbles from the mouth, from the patient being unable to swallow it. He is unable to sleep. The violent spasms come on in occasional fits, which are excited by the smallest causes, such as a sudden noise, a draught of cold air, or an attempt to swallow. The patient at length dies, suffocated in one of the convulsive attacks, or sinks from exhaustion. He remains conscious to the last, and his mind is clear, notwithstanding the great pain that he suffers. Men have been known to die of Tetanus in less than twenty-four hours ; but they more usually hold out two, three, or four days. The longer a man holds out, the greater is the hope of his recovery. If the disease lasts ten days, it will probably not be fatal ; but it will most likely be a month or more before the man is quite clear of it.

The treatment must be directed to remove all sources of irritation as much as possible, and to sustain the patient's strength.

The first thing to be done is to cleanse the wound thoroughly, and remove any dirt or other substance that may have got into it; and to let out any collections of matter with the lancet. If there is a foul, ragged wound, its surface may be destroyed with a white-hot iron. In other cases, the wound may be well washed with warm water, and dressed with lint dipped in Oil of Turpentine. Or if the wound has ceased to discharge, it may be poulticed, some Peruvian Bark being mixed in the poultice.

It is of the highest importance to get the bowels well cleared out. If he can swallow, give him 2 oz. of Black Draught immediately. Ten grains of Blue Pill, with ten of Jalap, mixed in a little butter or lard, should be put on the back of the tongue for the patient to swallow, and repeated after four hours if no effect is produced. A pint of thick gruel, with two table-spoonfuls of Turpentine mixed in it, should be injected into the bowels. As soon as they have been relieved, twenty drops of Laudanum, in hot brandy and water, should be given every half-hour, until he becomes drowsy. Brandy and water, and strong beef-tea, should be given (with a teaspoon if necessary) as long as he can swallow; and in a desperate case, should be injected into the bowels. Quinine should also be given, if the patient can take it. It should be given in large doses, 20 grains every 3 hours. Some cases have recovered under treatment with Hydrate of Chloral, 20 grains every two hours, combined with 30 grains of Bromide of Potassium (see No. 58). Keep a look-out that the bladder does not get over distended, and pass a Catheter if the patient does not make water. The recent discoveries of Dr. Koch indicate that this terrible disease may soon be divested of its fatal character.

HYDROPHOBIA, a disease caused by the bite of a mad dog or other animal, may be described as a violent form of Lock-jaw, with very severe spasms of the throat, which are excited by the slightest causes. Even the sight of shining surfaces, such as that of water or polished metals, is enough to produce them. The disease begins five weeks or longer after the receipt of the bite. The treatment is the same as for Lock-jaw.

BLEEDING FROM THE NOSE.

A common complaint. If the patient be red-faced, stout, and liable to headache and giddiness, he will be all the better for his nose bleeding now and then. But if the bleeding returns very often and continues too long, and if the patient is weak, it must be stopped by applying cold metal to the back of the neck, and cold water or ice to the nose and forehead, while the bowels, if confined, should be relieved by a moderate dose of Epsom salts. If these means fail, the patient must be kept sitting up, and the nostrils must be gently plugged with lint, cotton wool, or sponge, soaked in Tincture of Steel, No. 69.

PILES.

This disease consists of small lumps or tumours surrounding the vent. They may be inside or outside : and those inside frequently come down when the patient has a costive motion of the bowels, and there is difficulty in returning them. They often bleed, and give great pain and discomfort.

The chief cause of Piles is a costive habit, and a full diet with insufficient exercise. When tingling, heat, and pain are felt about the vent after a motion, and there is a slight appearance of blood, you may expect them to be forming. Avoid using strong purgatives, which will do harm, especially if they contain Aloes : but give a teaspoonful of Sulphur or Cream of Tartar every morning, to keep the bowels slightly open ; or a small dose of Castor Oil.

If the Piles or a portion of the gut come down, wash them with cold water, smear them with Gall and Opium Ointment, No. 67, and return them with gentle pressure of the fingers. Do not let them remain down a moment longer than you can help. If there is great pain and inflammation, it is best to foment the parts with warm water, and apply a Poultice of Linseed Meal or Camomile Flowers every three hours. To prevent the continuance of the disease apply rags wet with a lotion of Alum dissolved in Vinegar : or Goulard's lotion with a few drops of Laudanum. In old cases, from 20 to 40 drops of Balsam of Copaiba on sugar, or in a little water, may be given with advantage : and cold water

may be injected into the bowels after each motion. But the best way of curing Piles is by avoiding their cause. Simple diet, and abstinence from spirituous liquors, with bodily exercise, and perfect cleanliness, will do more than anything to prevent and relieve Piles. In full-bodied men of intemperate habits the bleeding may do good, and should not be checked too suddenly.

RUPTURE OR HERNIA.

A RUPTURE is occasioned by the giving way of the weak part of the walls of the belly, whereby a small portion of the intestines escape, and may be felt as a lump under the skin of the groin. The swelling usually appears suddenly, with a sharp pain, and sensation of something giving way during a violent exertion. But it may come on more gradually, so as not to be noticed at the moment.

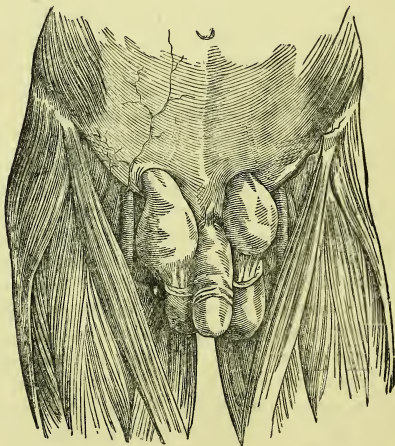


FIG. 40.

It is of the utmost importance to return the escaped piece of intestine into the belly without delay, because it soon begins to swell, and is liable to become fixed in its position, and then, as the channel of the bowel is closed up, the patient is in the greatest danger.

The accompanying figure shews the two commonest forms of rupture, as they would appear if the skin were removed. These both take a direction towards the testicles : and the direction in which pressure must be applied in returning them is upwards and a little outwards, as will be seen by the figure. But in some cases the swelling comes out a little farther from the middle line of the body, and takes a direction over the front of the thigh ; and in these cases the pressure must be directed backwards and then upwards. The mode of applying the pressure is described below.

Many persons have ruptures of many years standing, and they then learn by experience the easiest way of returning the gut. Sometimes a part only of the swelling can be returned, the rest always remaining out. The rupture in old cases commonly disappears partly or altogether when the patient lies down, and comes out again when he stands up. If the hand is placed on it while the patient coughs, it will be felt to bulge a little at every cough.

The following disorders may be mistaken for Rupture, and much mischief may be caused thereby, viz.:—*Hydrocele*, which is a watery swelling round one or both of the testicles ; this may be usually distinguished from Rupture by its beginning from the bottom of the purse, and being partly transparent, allowing the light of a candle to shine through it ; while Rupture comes down from the belly to the top of the purse, and is not transparent. But it must be borne in mind that both may exist together. An *enlarged state of the veins* of the testicles may be mistaken for Rupture, and must be distinguished from it by the touch. It feels like a bundle of knotty cords. A *deep abscess*, coming to the surface in the groin. *Bubo* (see Venereal Diseases), or *enlargement of glands* in the groin. All these cases differ from Rupture in

that they never come on suddenly, and that they do not cause stoppage of the bowels.

As soon as you have made out that the man is suffering from Rupture, give him 40 drops of Laudanum, and place him in a hot bath of 90° to 100° for ten minutes or a quarter of an hour, till his limbs are relaxed. Let him pass water if he can do so. Then let him lie on his back with his shoulders raised, and with both thighs bent up towards the body. Then take the swelling gently in one or both hands, according to its size, and compress it evenly, without the least violence, in the direction mentioned above. At the same time, press slightly with the fingers on the upper end of the swelling where it joins the belly, so as to coax it in, so to speak, little by little, through the hole by which it has come out. Be careful not to use too much force, as, by so doing, the bowel may be much injured. The attempt to put it back should not be continued for more than twenty minutes or half an hour. The patient should now be taken out of the bath, wiped dry, and put to bed. If the above treatment has succeeded, place a pad of lint, about the size of your fist, with a small, hard substance wrapped inside, just over the place where the bowel escaped, and then apply a wide bandage, as shewn in Fig. 36. Do not give any purging medicine for the first day or two, and as soon as the man can leave his bed, let him wear a truss, always putting on and fastening it while he is lying down. If the bowel cannot be returned, and snow or ice be handy, a bladder, or oil-silk bag, filled with either, is to be kept for some hours on the swelling; and often, under the constant application of cold, the swelling is so reduced that the bowel is easily pushed back. If, however, none of the above measures succeed, the part of the bowel which is protruded becomes "strangled," which gives rise to severe pain in the bowels, hiccough, and vomiting: the face wears an anxious expression, the limbs become cold, and the skin is bathed in a cold sweat, and the man dies from exhaustion, but remains sensible to the last. The only means of saving the life of a patient when the rupture is strangled, is an operation which can only be performed by a skilful and practised surgeon. The

only means to afford relief in these cases is to give one Opium Pill (No. 39) every four hours, to relieve the pain, and an injection or clyster of a pint or a pint and a half of warm soap and water, to which has been added an ounce of Castor Oil (No. 10), and half an ounce of Turpentine. Repeat the clyster twice or three times in the twenty-four hours, so as to encourage the bowels to act, but on no account give purging medicine. The man must be well supplied with nourishing food, such as beef tea, milk, eggs, and brandy, wine, or grog.

No ruptured man should go to sea without a well-fitting truss. In a case of rupture when out at sea, all means that the case admits of should be used to relieve and free the man from danger.

GRAVEL AND STONE IN THE BLADDER.

Many medicines have been recommended, but few have proved permanently beneficial. Attention to diet in eating and drinking will have the most effect; mild nourishing food will be the best, with vegetables, if procurable, avoiding malt liquor, and everything the least acid. The bowels must be particularly attended to, by giving one or two tablespoonfuls of Castor Oil (No. 10); and the following medicine may be given:—three drachms of Cream of Tartar (No. 11), dissolved in half a pint of cold water; forty drops of Laudanum (No. 26), and a tablespoonful of Olive Oil (No. 34); to be well shaken together; two tablespoonfuls to be taken three times a day, in a cup of barley water or Linseed Tea. Carbonate of Soda (No. 3) will also be useful, in doses of two scruples three times a day, dissolved in half a pint of water, with ten grains of Tartaric Acid (No. 50), and drunk during the effervescence. This plan, followed up, will, in many cases, obtain some relief until surgical assistance can be procured.

When the patient cannot pass his water, he should lie on his side, or try any other position that may enable it to pass. Should this fail, a Catheter must be introduced (as directed at page 96) up the passage into the bladder.

RETENTION OF URINE.

That is, when a man is unable to pass his water. It may be caused by—1. By holding the water too long after having a desire to pass it, or after heavy drinking. 2. Stricture. 3. Clap. 4. By an injury to the passage, and by falling on, or striking the fork. 5. Injuries to the back. 6. Stones in the bladder. 7. Fever. 8. By long exposure to wet or cold. The man can obtain no relief from pain until his bladder is emptied. A draught of Laudanum, (No. 26), 40 or 50 drops, should be given at once, and the man placed in a bath at 100 degrees Faht., kept at that temperature for a quarter of an hour ; he will often pass a little water while in the bath, which will ease him very much. If this plan does not succeed, a Catheter must be carefully passed into the passage. These instruments are small hollow tubes of various sizes, made either of metal, silver, or elastic gum ; they are curved, and there is a small hole on each side, near the end, to let the water flow into the tube when it is in the bladder. Elastic Catheters will bend easily, and are safer for inexperienced hands : there is a small wire inside for the purpose of keeping it stiff, while it is being passed.

When it is to be introduced, place the patient on his back, keep him warm, with his head and shoulders raised, and the knees drawn up towards the belly ; the Catheter is then to be *well oiled* with a little Sweet Oil, and, holding the yard in one hand, the point of the instrument to be passed into the opening of the passage ; gently pass it on, keeping the penis stretched ; but if it meets with any obstruction, keep it resting, very lightly, against the obstruction for a minute or two, then withdraw it, depressing the handle, and it will generally pass on again. Do this until it passes into the bladder, which is easily distinguished by the non-resistance, and a few drops of water coming from the end of the Catheter ; the wire may then be withdrawn, and the patient is immediately relieved by the urine flowing through the tube. The forefinger, passed into the fundament, will sometimes guide the instrument.

If you do not succeed after a quarter of an hour's trial, leave off for a time. A dose of Epsom Salts (No. 17) should be given to clear out the bowels, and afterwards another dose of Laudanum. If this fails, the warm bath should be repeated, and the stricture will generally yield a little, allowing, at all events, a small quantity of water to dribble away.

Sometimes, after severe straining, the patient feels that something has given way suddenly, and is immediately relieved. This is a very dangerous symptom, for it indicates that the passage has burst behind the stricture, and that the urine has escaped into the neighbouring parts. In a few hours the parts begin to swell, the skin becomes tight and shiny, and the man complains of a burning pain in the fork. He will be able to pass water, but the relief is only of a temporary nature. It is necessary in such a case to push a lancet deeply into the middle of the fork, behind the purse, and make a free cut, taking care to keep exactly in the middle line, in order to give escape to the urine. Several small cuts must also be made on each side of the purse, to let out the water there collected. Keep up the strength of your patient with good food, and wine, or grog, and see that the wounds are well washed with warm Carbolie Acid Lotion (No. 9) at least three times a day.

A real STRICTURE is the partial or entire closing up of the urinary passage. This disease comes on gradually, and its approach is known by the urine flowing in a small stream, or by drops, and requiring much straining on the part of the patient; the precise situation can frequently be ascertained by external examination. There is no medicine that will be of much service. The daily use of the Bougies is the only available remedy. Attempt to introduce a small one, once a day, for about a week, then use the next one for the same time, gradually increasing until the largest will pass without difficulty.

The Bougie is used chiefly to remove any obstruction in the passage, or to enlarge it, when, from inflammation or other causes, it is contracted or choked up, as in Stricture. It is elastic, and of various sizes, but not hollow. The smallest size should be introduced first; but sometimes the middle-sized one

will pass when the smallest could not, and therefore both should always be tried. Before introducing it, it should be slightly bent, with the curve upwards, and covered with oil, to prevent irritation. Great care is requisite ; if *force* is used with this instrument, or with the Catheter, there is a danger of rupturing the membrane of the passage, which (unless a skilful surgeon was at hand) might be certain death. It may be worn at first for about half an hour, gradually increasing the time from day to day. As the resistance diminishes, the size of the Bougie is to be increased. After having used a small Bougie for the requisite time, use, in the same manner, a larger size for the same time, and so on, until the largest is used. They may remain inserted as long as pain or inconvenience is not felt,—changing them about every third day, or introducing them morning and evening, for twenty minutes or an hour.

No man suffering from Stricture should venture to sea without being perfectly familiar with the use of these instruments.

It should be remembered never to use either the Catheter or Bougie without *oiling them well* ; and also to be *very careful* when it meets with any obstruction.

DRIBBLING OF URINE may be caused by Piles, Stricture, and Stone in the Bladder, and in children by worms in the bowels. If the patient be a lad, and he wets his bed-clothes at night, let him be roused at the end of each watch, and made to pass water.

VENEREAL DISEASES, OR BAD DISORDERS.

These are sometimes the most troublesome, and too often the principal complaints on board ship, especially at the commencement of the voyage, but they are all curable with proper attention. They are—External Clap, Gonorrhœa or Clap, Chafes, Chancre or Pox, and Bubo. There are also other complaints which may come on some time after any of these have appeared, such as Stricture (page 97) and Swelled Testicle after Clap ; spots and ulcers on the skin, sore throat, tongue, &c., after Chancre.

EXTERNAL CLAP is a common complaint with men who have long foreskins, and arises from want of cleanliness in allowing dirt to collect under the foreskin, and irritate and inflame the glans penis, or nut, and the lining of the foreskin. It is known to exist by a thick yellow discharge coming from under the foreskin, which, as well as the nut, becomes red, swollen and tender, but there is no ulcer. The foreskin must be drawn well back, which will give a good deal of pain, and must be well washed, as well as the nut, with warm water, and afterwards swabbed with a Lotion made with one dram of Lunar Caustic (No. 28) to ten ounces of rain water. This must be done three or four times a day, and the yard should be tied up to the stomach by a broad handkerchief round the hips. Attention to cleanliness, and an occasional use of the Caustic Lotion, will, in a few days, effect a cure.

INTERNAL CLAP appears from two days to a week after connection with a foul woman. It begins with an itching sensation at the opening of the passage ; the nut swells, and the skin covering it has a red, shiny appearance ; there is a feeling of heat and swelling in making water, which soon amounts to scalding, and sometimes causes great pain. The stream of water becomes twisted and broken, and may, in very bad cases, stop altogether. A greenish-yellow discharge now appears—at first thin, but afterwards thick and mattery. There is also itching along the under side of the yard, towards the vent, and the patient is often troubled with painful erections when warm in bed, which, when they are attended with twitchings, and the yard becomes bent down, it is called Chordee. This symptom is relieved by bathing the parts with warm water, and giving a draught of 40 or 50 drops of Laudanum (No. 26) in an ounce of water at bed time, will prevent them occurring. It is also better to avoid becoming heated by heavy bed-clothes.

The first thing to be done towards curing the Clap is to open the bowels freely with one or two Purging Pills (Nos. 40, 41), and a dose of Epsom Salts (No. 17), or a Black Draught (No. 4).

Afterwards give half a dram of Nitre (No. 30), or a teaspoonful of Sweet Spirits of Nitre (No. 44), in barley-water, three or four times a day. The yard must be frequently washed, and each time well soaked in warm water during the first week; exercise should be avoided as much as possible, and all spirituous and malt liquors, and highly seasoned food, as these make the disease much worse. Diluting drinks, such as barley-water, with Nitre, (No. 30), or Gum Arabic (No. 23), Linseed tea, toast and water, or tea, may be drank freely. While the discharge is large in quantity, and there is scalding in making water, it is worse than useless to give Copaiba, or use injections of Zinc, as in this stage they aggravate the complaint. It is better to use an Injection made of Laudanum (No. 26), two drams, Goulard's Extract (No. 22), one dram to six ounces of water, night and morning, which will quickly remove the scalding; or Injection No. 2, see Receipt No. XVI. After ten days, when the inflammation has subsided, give thirty drops of Copaiba (No. 13), with a teaspoonful of Sweet Spirits of Nitre (No. 44) in water three times a day. This medicine may be continued until after the discharge has ceased; it ought *not* to be left off entirely, as soon as the discharge has disappeared, but lessen the dose and times of taking it gradually; as from three times a day to twice a day, from once a day to every second day, and so on. The cure will also be assisted by using a weak injection (two grains to the ounce of water) of Sulphate of Zinc (No. 46). Throughout the complaint the bowels should be kept moderately open, but not purged. The use of Mercury in Claps or runnings is *quite unnecessary, and if given will do positive harm.*

HOW TO USE AN INJECTION.—A squirt should be filled with the injection, and the end of it put into the passage as far as it will go. The fluid is then to be slowly and steadily squirted into the pipe. When the squirt is taken away, the passage should be closed by the finger and thumb for a minute, to keep in the injection.

DISORDERS WHICH MAY FOLLOW CLAP.

RETENTION OF URINE (see page 96).

The SWELLED TESTICLE frequently happens, particularly when the running has been unseasonably checked by too early and large doses of Balsam Capivi, cold, hard drinking, strong purges, violent exercise, and too early use of injections. In the inflammatory stage, the patient should lie on his back in bed; the food must be light, and the drink such as linseed tea, barley-water, &c. High-seasoned food, salt meat, wine, and everything of a heating nature, should be avoided; fomentations are very useful; poultices ought constantly to be applied when the patient is in bed. Give a purge of Black Draught (No. 4). When not in bed, the testicles should be kept warm, and supported by a bag or truss, which may easily be contrived in such a manner as to prevent the weight of the testicles from hanging down, which would produce great uneasiness.

CHAFES are sores on the surface, generally caused by dirt. They generally appear on the groove between the foreskin and the nut, are of small size, and easily cured. They should be washed well with warm water; and dabbed with Caustic Lotion (see No. 28), and dressed with dry lint.

CHANCER or POX begins as a small pimple, which itches a good deal; a mattery head then forms, which bursts, and leaves a sore. It may be hard or soft. If hard, it has a raised, gristly edge, and is best treated, and should be kept constantly wetted, with Black Wash (No. 6). If soft, it only requires to be kept clean, and touched with caustic occasionally. Both the hard and soft Chancres are now treated with Iodoform (see No. 63).

Mercury is not required for healing Chancres, as they will get well without it, and much harm would be done by giving it without the advice of a medical man.

Chancres are often followed by spots and ulcers on the skin, loss of hair, pain in, and swellings on the bones, especially the shins. If any of these occur, the best medicine to give is five grains of Iodide of Potassium (No. 25), in a little water, three times a day, increasing the dose, in two or three weeks, to ten

grains, and continue to give it for several weeks. If, while taking it, the patient has symptoms of severe cold in the head, it will probably be caused by the medicine, and you must lessen the dose, or leave it off for a few days. If the throat is offensive, let the man gargle it frequently with a gargle made by adding a dram of Cond's Crimson Fluid (No. 14) to half a pint (ten ounces) of water. Also allow these cases a double quantity of lime-juice daily, to prevent a tendency to scurvy.

BUBO is a swelling which forms in the groin, often one on each side. It is an enlarged gland, and may be mistaken for a Rupture (see page 92). Buboes frequently enlarge and form abscesses, which become red, soften, and burst, discharging matter by a small hole. The man should rest, and apply hot linseed-meal poultices (No. 27). When the skin becomes very thin, the Bubo may be opened by lancing the swelling *across, not lengthways*; the poultice should be continued for two days or three days afterwards, and should be followed by lint and water dressing, or Carbolic Acid Lotion (No. 9). The bowels should be kept open with occasional purgatives, and after the Bubo has burst, or been opened, you must allow the man good food, and a small quantity of wine, beer, or grog.

GENERAL REMARKS.—There is hardly anything of more importance, either for preventing or removing the Venereal Disease, than cleanliness. By early attention to this, the infection might be often prevented from entering the body; and where it has already taken place, its effect may be greatly lessened. The moment a person has reason to suspect that he has received infection, he ought to wash the parts with brandy and water (half and half), or sweet oil; a small quantity of warm water (or new milk, if it can be had) may be injected up the yard. Injection of Cond's Fluid (see Receipt No. 16) is very useful.

One of the most unfortunate circumstances attending patients in this disease is the necessity they are often laid under of being *soon well*. This induces them to take medicine too fast, and leave it off too soon; a few days more confinement would often be sufficient to perfect a cure; whereas, by neglect of this, a small

degree of foulness is left, which at length contaminates the whole body. To avoid this, the patient should never leave off taking medicine immediately upon disappearance of the symptoms.

It is also particularly unfortunate for the cure of this complaint that not one in ten of those who are troubled with the disease, however badly, are either able or willing to take the proper means to get rid of it; as they must follow their business, and, to prevent suspicion, must work and live like the rest; this is the cause of one-half of the mischief that arises from the complaint. The cure is seldom or never attended with any great difficulty or danger when the patient will follow the foregoing instructions; but a volume would not be sufficient to point out the dreadful consequences which proceed from an opposite conduct, viz., hardened and enlarged testicles, ulcerated sore throats, consumption, carious bones, are only a few of the miseries derived from this source.

There is a species of false reasoning with regard to this disease which proves fatal to many. As, for instance, a person of sound constitution contracts a slight degree of the disorder; he gets well without taking much care, or using much medicine, and hence concludes that this will always be the case. The next time the disease appears, although ten times more virulent, he pursues the same course, and his constitution is ruined. It does not appear that the most robust health is able to overcome the virulence of the venereal infection, after it has once taken its hold, more than the delicate. In such a case a proper course of medicine is always indispensably necessary. Although it is impossible, on account of the different degrees of virulence, &c., to lay down fixed and certain rules for the cure of this disease, yet the above treatment will always be found safe, and, in eighteen times out of twenty, prove successful.

Never neglect to consult a Surgeon, if an opportunity occurs, and tell him all the particulars, and what has been already done, as the means of making all secure, and yourself comfortable and happy. But be very careful not to fall into the hands of *Quacks*, who call themselves *Herbalists*, as there are numbers of these

unprincipled men in every seaport town who only pretend to cure you, while they extort from you as much money as they can for filthy nostrums which are quite unsuitable for, or may do positive harm in your case. These men are better avoided, as by going to them you are losing valuable time, and delaying the proper cure, which will be rendered more difficult.

SCURVY.

This complaint is brought on by deficiency of vegetables in a fresh state, the use of hard salt meat, bad water, want of cleanliness, and too great use of tobacco. Where a crew is threatened with this disease, it is of the utmost importance to keep the ship as thoroughly clean and *dry* as possible, and the crew in gentle but pretty constant exercise. As a preventive of the attack of Scurvy in the longest voyages, the stores ordered by the Admiralty to be supplied to the crew afford the best possible security, in the absence of vegetables. The lime, or lemon-juice, and the vinegar, may be diluted with a little water, and the addition of the sugar tends very much to prevent irritation in the bowels. A free use of Sugar, which is highly nourishing, and very useful in preventing a tendency to putrefaction, is excellent as a preventive of the impoverished state of the blood which brings on this and other disease.

When the Scurvy begins to make its appearance, the patient becomes unwilling to work, and exhibits symptoms of sickness and uneasiness; the skin has a dry, disagreeable feel, the legs begin to swell, and appear glossy, the breath is very offensive, and the breathing difficult when standing upright; the gums begin to swell and bleed, becoming soft, spongy, and painful. Old sores often break out into ulcers, and old fractures become again disunited.

In hot climates, as soon as the sores begin to bleed, the legs to be blotched and have a dark appearance, either an obstinate costiveness or looseness prevails, and bleeding begins from the nose and mouth.

The Lime Juice may be applied to the sores, by means of Lint, twice a day ; or the following lotion :—Take, of Nitre (No. 30), two drachms, and dissolve in a quarter of a pint of common brown Vinegar. This last is a most excellent remedy, and may be used in the same way.

In the course of this disease, particular symptoms may arise which will require a separate treatment. Should there be costiveness, Castor Oil (No. 10) will be the best and safest purgative to give. Pains in the belly may be relieved by a few drops of Laudanum (No. 26), and fomentations of the part with warm water. Contractions of the hams and calves of the legs are to be relieved by fomenting the parts with warm vinegar and water, and by the application of poultices and friction ; sponginess of the gums, by washing the mouth frequently with gargles—see Alum (No. 1), and Nitre (No. 30). Spruce beer, wine, and spirits in moderation, porter, beer, and cider, also VEGETABLES, particularly salads, cabbages, and potatoes, are all proper in this disease ; and a total abstinence from all salt provisions. The usual ration of Lime Juice should be doubled.

The only certain cure, indeed, is a vegetable diet and living on shore, with moderate exercise, and a little opening medicine occasionally. Among the most certain remedies, likewise, are fresh oranges, lemons, limes, and apples, when to be had ; but perhaps no article is more valuable in long voyages, both for the prevention and cure of Scurvy, than POTATOES, which have the advantage of being cheap, easily obtained, and keeping well. The potatoes should be scraped, mixed with a little vinegar or lemon juice, and eaten freely, *raw*, from one to three pounds daily. Raw potatoes, scraped, will also be found an excellent remedy, when used as a poultice, for cleansing scorbutic ulcers.

FEVERS.

By this term we understand those complaints which are characterized by a disturbed and excited state of the body, and which are attended by loss of appetite, aching pain in the head, back,

and limbs, constipated bowels, hot, dry skin, thirst, inability to sleep, and restlessness. Often the patient is light-headed, and rambles. The pulse becomes rapid and throbbing, the face flushed and hot, the water is passed in small quantities, and is very dark coloured, and often thick. These symptoms are present in almost all Fevers ; but there are others which are present only in particular forms of Fever, and which serve to help us to decide what particular fever a man may be suffering from.

Fevers are divided into two classes :—1. Those which are *not Infectious* or *Catching*, that is, cannot be communicated from one person to another. In this class we have Simple Fever, or Common Cold, which arises from exposure to cold and wet. The treatment of this complaint is very simple—see Dover's Powder (No. 15). Also, Intermittent Fevers, in which the symptoms abate at certain intervals, called intermissions, and afterwards return. These include Ague, Remittent Fever, Dengue or Dandy Fever, and Yellow Fever, or Black Vomit. 2. Those which are *Infectious* or *Catching*, that is, can be communicated from a sick person to a healthy one. They are called *Continued* because the symptoms, instead of intermitting, go through a definite course of fourteen, twenty-one, or even thirty days, after which recovery or convalescence sets in. In this class we have Typhus Fever, Enteric or Typhoid Fever, and the Eruptive Fevers, which have each a rash, or eruption, upon the skin, by which we can distinguish them. They are Small Pox, Scarlet Fever, Measles, and Plague.

INTERMITTENT FEVER, OR AGUE.

This is one of the most common diseases that seamen are liable to, owing to the constant exposure to climate. It is prevalent along the whole of the North and South American Continents, the Coast of Africa, the East and West Indies ; indeed there are few ports which seamen frequent that it does not visit, more or less. Poor diet, great fatigue, long watching, exposure to the wet and cold, low spirits, and weakness from disease, all tend to increase the liability to infection ; but the neighbourhood of

marshes and stagnant water is the chief cause of Agues, which, like almost all diseases to which sailors are subject (except Scurvy), are more likely to arise in harbour than out at sea. There is good reason to believe that the water obtained from some ports gives rise to Ague. When this is suspected, boil all the drinking water. A night land breeze, in a hot climate, coming over a marshy coast, is neither more nor less than a **MALIGNANT FEVER AND AGUE**, looming large.

Whether the effluvia from the morasses or marshes of an unhealthy anchorage station shall act as causes of diseases on board ship, depends, however, very much on the means of *prevention* acted on by the master of the vessel, and *by the crew themselves*. Means may be, and occasionally are, adopted, which result in a remarkable exemption from disease, where escape seemed impossible.

On board a merchant ship it will be allowed that the prevention of disease is of almost as much importance as its cure; and it may be added, that if proper precautions are taken in manning, victualling, and *regulating* the ship and the crew, the diseases which are considered as peculiar to a seafaring life would be in a great degree unknown. Several suggestions for preventing infection from spreading its influence will be found at pages 20 to 26.

It is of the utmost importance that sailors who are obliged to *wood* and *water*, or perform other duties, on shore, in situations likely to produce Fever and Ague, should exercise caution in food and clothing. As a preventive, it is advisable for persons in such situations to take two tablespoonfuls, two or three times a day, of this mixture:—Quinine (No. 42), twenty grains, Elixir of Vitriol (No. 20) 2 drams, and Water, ten ounces. The Revisor of this article kept his ship's crew and himself free from fever, during a long voyage on the West Coast of Africa, by serving out one grain of Quinine every morning, and using only boiled water.

The disease known as the Intermittent Fever, or Ague, comes on at intervals, between each of which there is a perfect intermission of one, two, or three days. When the disease returns every day it is called "Quotidian," when it occurs every other day

it is called "Tertian," and when two clear days intervene between each attack it is called "Quartan."

The first, or the *cold* stage of an Ague, commences with great chilliness, rigours, and shivering of the body, sickness and vomiting; the loins, back, and head aching greatly. After a time the warmth of the body returns, and gradually increases to a burning heat, with hurried breathing, great thirst, sleeplessness, headache, and sometimes delirium, or raving. This is succeeded by a profuse sweating and sleep, from which the patient gradually awakes apparently well, complaining only of weakness. But at stated intervals, within three or four days (generally every other day) the attack regularly returns, in the same order.

The first step in the cure is to cleanse the stomach and bowels. This, of itself, sometimes arrests the disease, and always renders the operation of the other remedies more safe and certain. When a fit of Ague is apprehended, therefore, give a dose of Black Draught (No. 4), keeping the patient warm, and following it up with an Emetic Powder (No. 24).

By administering an emetic immediately *before* the coming on of the cold fit, allowing plenty of warm drink, and keeping the patient warm in bed, to assist perspiration while the emetic is acting, the return of the ague may sometimes be prevented. The patient should drink freely of warm water or weak Chamomile Tea (No. 7).

To put a stop to the further progress of the fit, in a cold stage, when it has taken place, recourse must be had to *hot drinks*, such as barley-water, thin gruel, &c., covering the sufferer with warm clothing, and putting bottles of hot water to the feet. From thirty to forty drops of Laudanum (No. 26), at the commencement of the disease, is often efficacious; *if requisite*, from fifteen to thirty drops more may be given, a quarter of an hour after.

The *Cold* stage of Ague has been known to prove fatal; this danger may be suspected should its continuance be long, the breathing difficult, and the pulse begin to fail. Cover the patient well, introducing hot bricks, or bags of warm salt, under the bed-clothes, placing them near the stomach, the heart, and the legs;

half a teaspoonful of Spirits of Hartshorn (No. 45), and a little cayenne pepper, may be given in a glass of wine. Hot brandy-and-water may be given freely, if necessary. As it would not be safe to give an Emetic, an attempt may be made to excite vomiting by filling the stomach with warm water or thin gruel, and then putting a feather, or the finger, down the throat. When the pulse rises, and the skin becomes warm, the danger may be considered as over for the present.

The *Hot* stage may also be fatal ; should the patient become quite delirious, the countenance flushed, the eyes red, accompanied by a constant watching and restlessness, this result may be apprehended. In this case, bathe the head with cold vinegar and spirit, after cutting off most of the hair ; plenty of fresh air is to be freely admitted into the berth, with a very slight covering of bed-clothes ; nothing but cold water allowed as drink.

When an intermission of the attack is obtained, during the interval, Quinine is the grand remedy. It should be given in large doses—15 grains immediately after the attack, and again just before the attack is expected. It is best given with 15 drops Elixir of Vitriol (No. 20), and 1 ounce of Water. If the stomach will not retain it, inject it, mixed with beef-tea, into the bowels. In case of a regular attack of Intermittent Fever, in a cool climate, it is advisable to wait for a perfect intermission before giving the Quinine, and give the medicine as soon as the hot fit is over. But in the hot climates, where Intermittents are apt to degenerate into *Remittents* (see next article), or continued fever, it would be right to employ them very soon after the attack.

The medicine should be continued for some time after the disappearance of the complaint, in order to prevent a *relapse* ; particularly in damp weather, or during the prevalence of an easterly wind. The bad effects on the bowels which sometimes arise may be obviated by addition of other medicines ; thus, diarrhœa, or looseness, will be prevented by adding from four to eight drops of Laudanum ; and costiveness, if it occurs, by Rhubarb, or other mild purgative.

Medicine, however, will fail to kill the disease, unless particular attention be paid to the diet, which should consist only of gruel, sago, arrow-root, cocoa, stale bread, &c. ; no wine, ale, acids, or spices can be taken without aggravating the complaint. When the fever is fairly on the decline, the treatment, as to diet and medicine, must be changed. Meat, with ale, porter, or wine, may be given moderately ; should no increase of fever follow, they may be more freely used.

REMITTENT FEVER.

When the fever *abates*, but does not *go off entirely*, before another attack begins, it is then called *Remittent*. In warm climates, especially near the tropics, the Remittent is a very prevalent kind of fever, and attended with more suffering than the other form ; the fits, also, come on at irregular times.

It should be treated according to its principal symptoms. Give a mild emetic, such as Ipecacuanha (No. 24) ; and afterwards the bowels may be emptied by some mild purgative—twenty grains of Rhubarb (No. 43), or Castor Oil will answer the purpose.

The worst cases must be treated in the manner recommended for Yellow Fever.

As soon as intermissions become well marked, Quinine should be administered as prescribed in Ague. In hot climates, however, it will be necessary to give the Quinine whenever there is a slight remission or abatement of the fever, without waiting for a complete intermission.

The diet of the patient should be of the lightest kind ; such as sago, rice, arrow-root, &c. ; spirits, wine, ale, acids, and spices are not allowable. If frequent vomiting occurs, apply a large blister to the stomach.

DENGUE, or DANDY FEVER.

This is a Remittent Fever, prevalent in the West India Islands, and the southern parts of India. It may occur among crews who have been long on shore in these parts. It begins in the same

way as common cold, viz., heaviness of the eyes, giddiness, a sensation of cold creeping down the back. There is great pain in the head, loins, and all the joints, both small and large. The hands become stiff and swollen, the eyes watery, and the face bloated, swollen, and flushed. There is intense aching of the eyeballs. The skin is dry and hot. Towards the end of twenty-four hours the symptoms subside, perspiration appears, and the man is very weak. About the end of the third day the symptoms return. The skin is hot, and red blotches like measles, or scarlet fever, appear upon the swollen hands and feet, and produce distressing tingling and itching. During the day these spots spread all over the body, and then die away. It must be treated in the same way as Remittent Fever.

YELLOW FEVER, OR BLACK VOMIT.

This dangerous disease is not *contagious* in places where there is good fresh air, cleanliness, and regularity ; but becomes so in unwholesome, swampy situations, where much filth is allowed to accumulate. It occurs chiefly in warm climates, more particularly along the coast of Africa, North and South America, and the West India Islands.

The Yellow Fever usually commences with lassitude and weariness, shivering, and great inclination to vomit, faintness, and giddiness, flushing of the face ; the lower part of the forehead and the eyeballs are painful, the eyes red and brilliant ; constant wakefulness, pain in the back, and general debility ; pain on pressing the pit of the stomach ; urine scanty, high coloured, and turbid ; the tongue covered with a dark fur, the skin hot, dry, and hard. There is commonly, at the commencement, much bile on the stomach, which is thrown off by vomiting, either natural, or to be brought about by giving an emetic. In the course of the progress of the disease, however, it is not common for an excess of bile to exist ; but, on the contrary, rather a deficiency of it, in violent and dangerous cases, as indicated by the clay-coloured stools. As the disease continues to advance (about the third day),

the skin of the face and breast becomes yellow, and the same colour is visible in the eyes ; the retching and vomiting becomes incessant, and the bowels very costive, with a burning sensation in the stomach ; the patient cannot be raised without fainting. The disease may be fatal in a few hours, though it seldom terminates in death until the fifth or sixth day, and sometimes longer.

In the fatal stages of the disease, the greatest weakness prevails : livid spots are visible on the skin, the tongue dry and black ; teeth incrusted with a dark fur ; hiccough and offensive breath. The whole body becomes of a yellow hue, the pulse sinks, the extremities and surface of the body become cold ; dark and foul stools are discharged ; bleeding from the ears, nose, and gums takes place, accompanied by vomiting of a black matter, resembling coffee grounds, when death follows.

It is proper, in all fevers of warm climates, to commence by cleansing the stomach and bowels. In Yellow Fever, however, when there is copious natural vomiting, taking an emetic may be omitted, the patient drinking freely of Chamomile tea. In case of constant *retching* and *inclination* to vomit, give one scruple of Ipecacuanha (No. 24) at the commencement, repeating it in half an hour, if necessary, the patient being in bed, and drinking plentifully of warm water during its operation ; a profuse perspiration often succeeds, and stops the disease, unless very violent. As the vomiting will interfere with giving opening medicines, a clyster of one ounce of Castor Oil in a pint of thin gruel may be given daily, if required. After the first purging, the bowels must be moved every day ; but as the stomach will not bear purgatives for the first three or four days, clysters of salt water must be given to produce the effect. When the vomiting has subsided, an ounce of Castor Oil should be given, and a very low diet observed for a few days, as there is sometimes a remission of the disorder after thirty-six or forty-eight hours from the attack, followed by a return of the symptoms, with redoubled violence. Poultices or Mustard Plasters should be applied over the pit of the stomach as soon as vomiting commences.

From the first hour of the attack, the patient should abstain from solid food, and subsist on sago, gruel, or barley-water, with lemonade, toast and water, orange juice, &c. The greatest cleanliness is absolutely requisite. Should the patient be in a sinking state, a little wine may be allowed; but not unless it appears absolutely necessary.

The external application of cold water or ice, or equal parts of vinegar and water, sometimes checks the disease, when applied freely at the commencement, especially to the head, and other parts of the body where there is unnatural heat and dryness of the skin.

To bring the stomach to bear proper medicine is a great object in the cure. The only obstacle is the violent and obstinate disposition to vomit, which is the most alarming symptom of the disease; the principal part of the management consisting in the prevention or removal of it. The stomach is, therefore, to be treated with the greatest tenderness, and only such drinks given as are soothing and grateful. Should excessive retching continue to exist, small doses of Carbonate of Soda (No. 3) and Tartaric Acid (No. 50), may be given whilst effervescing, every half hour, or small pieces of ice may be swallowed and allowed to dissolve in the stomach.

When the vomiting is allayed, the bowels should be opened with ten grains of Calomel (No. 53) and twenty grains of Jalap (No. 54), given in syrup, and assisted by a clyster of warm gruel. If this fail to open the bowels, the dose should be repeated, or some other purge given, within two or three hours after the first. Calomel possesses great advantages over other medicines in this complaint, being less bulky and less offensive to the taste, and consequently less likely to be thrown up by vomiting.

As soon as the bowels have been moved, and the stomach will admit of it, give the Quinine (No. 42). But if there is much inflammation, and the disease still gains ground, discontinue the Quinine, and give Calomel (No. 53) in large doses; five grains, with six or seven drops of Laudanum (No. 26), in treacle or thick syrup, may be given every three hours, until the gums become

affected, and salivation is brought on. It is very desirable in this fever to excite a Mercurial action, so far, at least, as to induce some spitting, but sometimes this cannot be done by mercurial pills, or other internal medicines, owing to the necessity of appropriating the retentive power of the stomach to the Quinine. The object, therefore, must then be attained by rubbing a portion of Mercurial Ointment, of the size of a nutmeg, on the inside of the thighs every eight hours.

When blood flows from the nose and gums during the disease, it is a very dangerous symptom. If the bleeding from the gums be excessive, so as to weaken the patient, ten grains of Lunar Caustic (No. 28), dissolved in half a wine-glassful of water, and applied freely, will greatly check it.

When the stomach becomes perfectly quiet, it will afford the patient great relief to procure perspiration and sleep, for which purpose a powder, composed of one grain of Calomel (No. 53), one grain of Camphor (No. 8), and one grain of Opium (No. 39), may be given in the evening. After one or two days, a dose of Seidlitz Powder (No. 52), or a small dose of Salts (No. 17), may be taken daily.

The precautions necessary to *prevent* this dreadful disease are as follows:—Should the ship be at anchor where the disease is prevalent, or at a station which is known to be unhealthy, from swamps or otherwise, give a wine-glassful of the Quinine Mixture to each of the crew daily, as well as a gentle dose of Salts (No. 17) occasionally; the food allowed should be better than usual,—porter, wine, and good animal food should be freely used. Spirituous liquors should be very sparingly allowed, if not entirely forbidden, as they are apt to pre-dispose the system to the disease; and those persons who have accustomed themselves to a free use of them are much less likely to recover from an attack of the Yellow Fever.

TYPHUS AND TYPHOID FEVER.

These two forms of Fever have, until comparatively late years, been considered as one and the same disease, but, with ordinary care in examining a sick person, it is not difficult to distinguish the one from the other.

Typhus is essentially a "low" Fever, commencing by the most complete prostration, which increases, as the disease advances, until the vital powers become reduced to the lowest ebb. It is very infectious, and has been called Gaol, Camp, Ship, and Hospital Fever, because it used to be prevalent in these places; it also has been called Malignant, from its very fatal character. Typhus is caused by overcrowding, with imperfect ventilation, and insufficiency of food, especially when a person has been depressed by mental or bodily fatigue or hardships. It may come on suddenly or gradually. There is shivering and headache, and pain in the back and limbs; the patient walks unsteadily, and the face wears a dull, anxious, and confused expression, and sometimes closely resembles that of a person in a state of intoxication; the appetite fails, there is a feeling of sickness in some cases, the bowels are generally confined, and the tongue is coated with dirty white fur; the pulse is feeble and fast. During the second and third day the skin becomes hot; the patient is thirsty, and very weak and exhausted. If he gets any sleep it is disturbed by dreams, and he mutters, and often starts; his mind is confused, and he answers questions slowly. About the fifth or sixth day a rash of red or purple-coloured spots comes out on the front of the body, and often appear in patches, which remain out during the time the fever lasts. About the seventh day the patient becomes delirious, or light-headed, and mutters constantly, or talks loudly and wildly; his mind becomes still more confused, and he is deaf; the hands tremble and are convulsed, constantly grasping at objects in the air, and picking the bedclothes; the stools and water pass involuntarily; the tongue is dry, brown, and cracked, and the breath is offensive; he can scarcely swallow, and if no improvement takes place, he sinks into an insensible

condition ; congestion of the lungs comes on, and he dies suffocated. The crisis, or "turn," occurs about the fourteenth day, and, if favourable, the patient falls into a sound sleep, the skin becomes warm, the tongue moist, a gentle perspiration sets in, the patient regains his senses, and soon there is a craving for food.

In these cases it is important to shave the head when the brain symptoms are severe, and ice, or cold water and vinegar, may be applied to the head, and the body well bathed with it.

At the commencement the bowels must be well moved—five or ten grains of Calomel (No. 53), and Jalap, half a drachm (No. 54). Sleeplessness may be counteracted by Laudanum (No. 26), twenty to thirty drops at night, or an Opium Pill (No. 39). Good nursing and attention are indispensable, and diet is more important than medicines. Milk, eggs, and beef-tea are to be allowed freely, and when bad symptoms show themselves, brandy is to be given to the extent of from one-quarter to one-half, or even three-quarters of a pint a day in bad cases. Strict attention must be paid to the bladder ; if the urine does not pass it must be drawn off with a catheter (see page 96). The skin over the rump and hips should be washed twice a day, and afterwards bathed with brandy, and the bedding changed frequently. The best medicine to be given during this disease is Spirits of Hartshorn (No. 45), twenty or thirty drops every four hours in a little water ; if the breathing is difficult, add a few drops of Ether to each dose, and apply mustard poultices or turpentine stupes to the chest. During convalescence give Quinine Mixture. When the appetite has returned, do not allow too much food at a time, but in small quantities, and often.

As the fever is so very infectious and dangerous, the patient should be removed from among his shipmates, and put in a berth as airy and as far from them as possible. Disinfectants and free ventilation must be used in all parts of the ship. (See pages 24 and 26).

TYPHOID or ENTERIC, also called **GASTRIC** and **CRESSPOOL FEVER**, is caused by decomposing animal matter, and is liable to occur on board those vessels which carry cargoes of bones and hides, &c.,

or anything which is liable to become putrid. It is only slightly infectious, but where one case exists among a crew, others are liable to occur, unless the cause of the first be removed. It comes on with chilliness, loss of appetite, and feverishness, sometimes accompanied with sickness and diarrhoea, or looseness of the bowels. The patient becomes weak, the skin hot and dry; the lips crack, and there is great thirst; the face is pale, and somewhat pinched; tenderness will generally be complained of on pressing the belly. On the seventh day, or a little later, a few rose-coloured spots, or pimples, make their appearance on the belly, chest, and back, and they disappear for a short time after the finger has been pressed upon them. In at least half the cases, however, they are absent, or very few in number. At the end of the second day after they have come out they fade away, and new ones arise, which in like manner disappear, and are succeeded by another crop. The temperature is characteristic, varying from $98\frac{1}{2}^{\circ}$ (good health) up to 104° , the evening temperature being generally 2° higher than the morning. The belly becomes swollen and tender, and the purging is more severe; the stools are watery, and of light yellow colour; the tongue is covered with dirty-white fur, and, if the purging continues, it becomes dry, brown, and still more cracked; the teeth are crusted, and there is much delirium. During the second week, and afterwards, blood may be lost from the bowels at intervals, and the patient becomes pale and prostrate. Another danger is that the bowel may burst inwardly, and rapidly cause death; this may be thought to have taken place when the belly is very swollen, and there is obstinate hiccough and vomiting, attended with severe pain in the belly, and the patient gradually sinks into a state of insensibility, and dies exhausted. In favourable cases the improvement is generally slow. The purging diminishes, and the motions become more and more solid; no fresh spots appear, perspiration appears; the tongue becomes clean, and the appetite quickly returns. The disease lasts generally over four weeks, rarely less than three. Convalescence is in some cases interrupted by a relapse, when the spots reappear, with the diarrhoea and other urgent symptoms.

It was this disease which caused the death of H.R.H. the Prince Consort in 1861, and also from which H.R.H. the Prince of Wales so narrowly escaped in the winter of 1871-72.

DIFFERENCE BETWEEN TYPHUS AND TYPHOID.—Typhus arises from overcrowding and bad living, and is common among poor people. Typhoid arises from decaying animal refuse, such as sewer-ages, night-soil, and bad drinking water. In Typhus, the principal symptoms are connected with the brain and head; in Typhoid, they are in the bowels and belly. In the first, the spots remain out during the whole time of the disease, which is usually only a fortnight, but sometimes three weeks; in the second, the spots come out for two or three days only, and then die off, and others come out, which are again followed by another crop, and so on during the whole time of the disease, which is usually over four weeks, and very rarely less than three.

The spots of Typhoid may be mistaken, when they first come out, for those of Smallpox, but after a day or two it becomes easy to tell which complaint it is. (See SMALLPOX.)

In cases of Typhoid, we must be very careful not to give strong purges, on account of aggravating the disease in the bowels; if they are not moved, they should be gently opened with an injection, or clyster, or a dose of Castor Oil (No. 10). The diet must be carefully regulated; all solid food must be avoided; eggs, milk, and arrowroot; the first may be given beaten up with tea or coffee; beef-tea must be given frequently; a few ounces of port wine may be allowed daily, and increased to a pint or more as the patient's strength fails. Sickness may be relieved by effervescing draughts (No. 3), to which add twenty or thirty drops of Spirits of Hartshorn (No. 45). Diarrhoea may be checked by ten or fifteen drops of Laudanum (No. 26), with ten drops of Elixir of Vitriol (No. 20), in an ounce of water, three or four times a day; if blood is passing from the bowels, give ten or twenty drops of Turpentine; hot fomentations, mustard poultices, or turpentine stupes, applied over the belly, are useful to ease the flatulence

and pain. If the symptoms are not severe, you can give Quinine Mixture throughout the disease.

For some time after convalescence has set in, and not until a full fortnight after the stools have become solid, must any solid meat or vegetables be allowed, and the man must be kept very quiet; for if these rules are neglected he may have a relapse, or the bowel may be burst, and cause his death. Give fluid foods, such as eggs, beaten up with wine or brandy, milk, arrowroot, beef-tea, or strong soups, &c. In a very protracted case, be very careful to guard against bed-sores upon the rump or hips; these parts, when the skin becomes at all reddened, should be bathed with brandy; and small pillows, or bags of bran or tow, should be arranged under the patient, so as to ease the part of pressure for a time. It is a good plan to make the patient change from one side to the other every second day, and to take great care to keep the bedding dry and clean; in these cases also look to the bladder, and, if the patient cannot empty it himself, use the catheter. (See page 96). As soon as a case occurs on board ship, examine into the state of the drinking water, and if it has at all a bad smell, add a few drops of Condyl's Fluid (No. 14), to each gallon of water, or, better still, filter and boil before drinking. Bad smells should be traced at once to their sources, and the cause removed. Any accumulation of filth on board should be removed, and the ship be well-ventilated, cleaned, and disinfected (see pages 24 and 26). Also see that the water-closets are well flushed with water, and disinfected.

The Eruptive Fevers are contagious, and attack a person, for the most part, only once. They begin with fever, which is followed, after a short and nearly definite interval, by an eruption or rash upon the skin.

SMALL-POX.

The eruption in this loathsome disease is so distinct and peculiar, that after it has come out, there can be no mistaking the complaint. There are three varieties of Small-Pox—(1) Distinct, in

which the pimples or pocks are separate from one another ; (2) Confluent, in which the pocks are close, and run together in clusters or irregular patches ; (3) Mild or Modified, in which the eruption and the fever are not so severe as in the other two varieties. This modification in the severity of the disease is due to two causes—Vaccination and a previous attack of the disease.


An attack of Small-pox commences with shiverings, headache, extreme weakness, and severe pain in the loins and across the pit of the stomach, which is tender ; there is sickness, and a white furred tongue ; also drowsiness. These symptoms are followed by feverishness, hot and dry skin, restlessness, and, in some cases, delirium. The patient continues in this condition about forty-eight hours, when the eruption appears (but sometimes earlier, and sometimes as late as the fourth day) on the face and forehead as very small pimples about the size of a pin's head. During the third and fourth days it comes out more fully, covering the face, then the neck, shoulders, arms, and hands ; next the body, legs, and feet. About the fifth day a small, round vesicle (bladder), filled with clear fluid, and surrounded by an inflamed margin, may be seen on the top of each pimple. The eruptive fever now declines rapidly. About the sixth day there is some swelling of the throat, with difficulty of swallowing, hoarseness, and a flow of thick saliva (spittle). Each vesicle (bladder) is slightly depressed or sunken in the centre. About the eighth day the central depression has disappeared, the inflamed margin has attained its full size, and the contents of the vesicles have become thick, opaque, and mattery ; they are now called "pustules." The face swells ; the eyelids are often so swollen as to close the eyes, and the mouth, nose, and throat are covered with pustules. About the ninth day the pustules have attained the full size, and are marked by a brown central spot. The inflamed margin disappears, the swelling of the face subsides, and the hands and feet begin to swell. About this time the secondary fever sets in, characterized by extreme restlessness, sleepless nights, a dry, brown tongue, scanty and high-coloured urine, and frequently by delirium, especially at night. The bowels are usually constipated,

often obstinately so. After this time the pustules break, and their mattery contents ooze out, and, drying on the skin, form crusts, or scabs, which, about the twelfth day, fall off, and leave the skin beneath of a purplish-red colour, which often remains for weeks. The swelling of the hands and feet gradually subsides, and about the seventeenth day the patient is convalescent. In the more severe cases, permanent white scars called "pits," or "pock-marks," are left upon the face and exposed parts of the body. This is the history of a case of Distinct Small-pox. In the Confluent form, the eruptive fever is more intense, and only slightly subsides when the eruption appears, but is continued into the secondary fever, which is also more severe, and often assumes the typhous character. The pustules, instead of being round, are flat and irregular; the swelling of the face and neck increases to such an extent as to prevent the patient being recognised as a human being. In cases of a typhous character the eruption assumes a dark purple or black hue, and blood appears in the urine; there is insensibility or violent delirium, and the patient is often carried off on the night of the eleventh day. In cases of recovery the scars are much deeper and larger than in the milder form. In Mild, or Modified cases, all the symptoms are slight, and the patient is often only kept in bed one day with feverishness, and as soon as the eruption appears he is well, unless it happens to be sufficiently extensive to give rise to secondary fever.

Abscesses, ulcers, and boils, as well as erysipelas, typhus fever, blindness, deafness, and lameness; also pleurisy, and inflammation of the lung, may accompany or follow a severe attack of Small-pox, which must be treated as directed in those sections describing these complaints.

Small-pox may be communicated by the air, the living and dead body, the matter in the pustules, and the dried scabs. There are two methods of modifying Small-pox:—(1) By Inoculation, that is, communicating the disease from an infected to a healthy person, by inserting some of the matter into a small cut in the skin, but this method has been prohibited by Act of Parliament for many years; (2) Vaccination, that is, communicating the disease called

Cow-pox, by inserting some of the matter, or lymph, under the skin, after it has been pricked or scratched. The protecting power of Vaccination was discovered by Jenner, in 1796, and the benefits conferred on mankind by it have been universally admitted ; but it is now the fashion of the day to cry down this remedy as not only useless, but positively injurious, and it is as well that all sensible people should not allow themselves to be carried away by a number of new and almost groundless prejudices, and thus lose the protection afforded by re-vaccination (that is, vaccination after 14 years of age), which was proved to be very great during the dreadful epidemic of 1870-72, in London.

The Vaccination of infants three months old is rendered compulsory by Act of Parliament ; Re-vaccination is not enforced, but it is advisable for adults to be done, especially when the disease is prevalent, or they are going into a port where it exists. The plan of performing the operation is this:—With the point of a clean lancet make three or four scratches upon the skin of one or both arms, a little below the shoulder, so as just to bring blood ; then make three or four scratches crossways of the other, thus 

next apply the lymph, which is preserved in two ways—(1) Dry, on “points” of ivory, or bones ; it will be at the pointed end, which must be well breathed upon, or held in steam for a few minutes, to moisten it ; then rub the end of the “point” upon the scratched place, using both sides of the point ; use one “point” for each scratched place, which should never be less than three. (2) Moist, in sealed glass “tubes ;” break off both ends, and blow gently into one, while the other is placed on a bit of glass or the point of the lancet, and rub it well into the scratched places with the latter, leaving the blood and lymph to dry on ; one tube will generally supply enough for three persons. In eight days the vesicle, or bladder, will reach its full size, and about the twelfth it is scabbed over ; the scab falls off about the twentieth, leaving a deep scar, called the “vaccination mark.” If this “mark” is not distinctly seen, it proves the previous vaccination did not take full effect, and re-vaccination is necessary.

When the symptoms of Small-pox first appear, give an emetic of Ipecacuanha Powder (No. 24), followed by a dose of Black Draught (No. 4), with or without two Purgine Pills (No. 40), or five grains of Calomel (No. 53). During the eruptive fever give cold drinks, and effervescing medicine (No. 3), and let the arms and hands be spunged with cold, or lukewarm water. After the appearance of the eruption, give Effervescing Mixture (No. 3), adding half a teaspoonful of Spirits of Nitric Ether (No. 44); and if there is much vomiting, a few drops of Laudanum (No. 26), every four hours; and, if the bowels are confined, give a powder of Jalap (No. 54) twenty grains, and Calomel (No. 53) five grains, or a Black Draught (No. 4). A full dose of Laudanum (No. 26), thirty drops, will generally be required at bed-time. If the patient's strength fail, he must be supported with wine or brandy, and nourishing diet. Quinine (No. 42), or the Bitter Ingredients (No. 5), may be given three times a day, and a warm bath used repeatedly during convalescence. Inflammation of the eyes should be treated by frequent sponging with warm water, and the application of this lotion:—Lunar Caustic (No. 28) ten grains, rain water six ounces. Olive Oil (No. 34), or Simple Ointment (No. 33), or simply warm water, are grateful applications to the swollen and irritable face. The secondary fever requires the same treatment as continued fever of the same kind and severity. To prevent pitting, protect the skin from the air by the plentiful application of Olive Oil (No. 34), or Castor Oil (No. 10), and darkening the berth, but do not obstruct free ventilation. Disinfect and clean, and ventilate the ship as directed at pages 24 and 26.

Burn, if in harbour, or throw overboard if at sea, every article of clothing, bed, and bedding used by the patient. It is essential that only one person be told off to nurse the patient, and preferably one who has had Small-pox, or who is well vaccinated, and who is not afraid of the disease. Re-vaccinate all the men on board who have not large and distinct "vaccination marks," and also foreigners who have not been vaccinated at all.

MEASLES.

This complaint commonly exists among infants and children, but it may occur at any age. The symptoms are similar to those of a feverish cold, and it is attended with thirst, furred tongue, watering of the eyes, and swelling of the eyelids ; also hoarseness, difficulty of breathing, and frequent sneezing. On the fourth day, small red spots, resembling flea-bites, appear in clusters, or patches, of a crescent shape, and of a deep red colour, upon the face, neck, and arms ; a day later on the body, and afterwards on the legs. Between the sixth and eighth day the rash fades in the order in which it appeared, and in two days the skin is left rough, and portions of it separate in very fine mealy powder. Diseases of the lungs are very apt to follow measles, as well as diarrhoea, swellings of the glands, which may turn to abscesses. The cabin or berth should be kept warm, and free from draughts of cold air ; it is a good plan to keep a kettle of water constantly boiling, and so arranged as to let the steam come into the cabin, so that it can be breathed, and afford relief. The diet should consist of thin gruel, milk, and water, or beef tea, with bread ; also allow plenty of barley-water, linseed tea, or a decoction of figs in milk. The bowels should be freely relieved. Gregory's Powder (No. 43) is the best for children. Difficulty of breathing and cough can be relieved with large hot poultices of Linseed meal (No. 27), with or without a little mustard, to the throat or chest, and a mixture of Paregoric Elixir (No. 36), and Spirits of Ether (No. 44). If the disease take the form of "low" fever (see Typhus, page 115), it must be treated with stimulants. During convalescence the diet should be nutritious, the bowels regulated, and the dress warm ; give Bitter Ingredients (No. 5), and take great care to avoid exposure to cold draughts.

SCARLET FEVER.

This common disorder, like measles, mostly attacks children, but adults are also liable to catch it. It varies very much in its intensity, from cases in which no rash appears, and the patient

only complains of a slight sore throat, to those in which the greatest danger exists. It is characterized by the ordinary symptoms of Fever, to which is added those of sore throat; the inside of the throat becomes inflamed and swollen, and there is great difficulty in swallowing. About the second day a bright scarlet rash appears on the face, neck, and arms, and then extends over the body and legs; it begins to fade on the fifth, and wholly disappears by the eighth day. The outer or hard skin now separates as a scurf from the body and limbs, and in large flakes from the hands and feet. In severe cases it is a very long and dangerous illness; the throat becomes ulcerated and very foul, the patient becomes extremely weak, and the fever becomes typhous in character, and must be treated as Typhus Fever (see page 115). This complaint must be treated in the same way as Measles, as regards diet and warmth. An Emetic (No. 24) may be given at the commencement, followed by a Black Draught (No. 4), or a large dose of Castor Oil (No. 10). A mixture of Nitre (No. 30), and Spirits of Nitric Ether (No. 44), may be given every four hours, as well as effervescing drink (Nos. 3 and 52). An alum gargle (No. 1) may be used for the throat, and it may be swabbed out twice a day with a solution of Lunar Caustic (No. 28), thirty grains to an ounce of rain water. When the eruption is fading, the patient should be kept very warm, and clothed in flannel, as a sudden chill stops the action of the skin, and leads to congestion of the kidneys. The diseases which accompany or follow Scarlet Fever are very many, the most important being acute inflammation of the kidneys, with dropsy of the whole body; it is a very tedious disease, and very little can be done to cure it. Children after having Scarlet Fever are very liable to have diseased bone in the head, giving rise to offensive and obstinate discharges from the nose and ear, and in the latter case deafness results; abscesses may form in the neck, and also in the large joints of the limbs. During all the troublesome complaints, the strength must be kept up by nourishing diet, wine, and tonics; when matter is discharging, be careful to keep the parts well cleansed with warm water, to which a few drops of Condyl's Fluid (No. 14) has been

added. Swelling of the joints is best treated with hot fomentations. The treatment of the Dropsy and Kidney Disease requires a good deal of judgment, and is best left to the care of a medical man, if practicable.

Scarlet Fever is very contagious, and the infection remains in a place for a long time after the disease has left ; it is communicated by the air, clothing, &c. The skin peels off the whole body in the form of a fluffy powder. This powder blown about by the air is quite capable of giving rise to the disease, and it is best prevented by oiling the body frequently with Carbolic Oil. (See Receipt No. XIV). Use the same precautions as recommended in Typhus Fever (page 115) to prevent it from spreading.

PLAGUE.

This is a contagious Fever, resembling Typhus, and is accompanied by an eruption of buboes and carbuncles. It is prevalent in Egypt, and often spreads to the surrounding countries. The patient is attacked suddenly, or after slight shivering, with depression, pain, and weight in the head, and giddiness, with an indescribable feeling of anxiety, and extreme restlessness, and pain about the heart. The countenance is expressive of exhaustion and anxiety, the eye is dull and sleepy, the eyelids closed, the mouth half open ; the walk is staggering and uncertain, like that of a drunken man ; the debility extreme ; the eyes are dull and sunken ; the complexion dusky. There is sickness, or vomiting of bile, often accompanied by diarrhoea. The urine is scanty, high-coloured, and sometimes bloody ; the tongue is swollen, furred, and shiny ; the pulse is very rapid and feeble ; breathing hurried ; speech indistinct and faltering. Generally, after twelve hours, a change in the symptoms takes place, with sleeplessness and delirium ; the eye assumes a peculiar brightness ; the pulse hard, weak, and fluttering ; the tongue dry, parched, and of a yellowish colour—it soon becomes hard and cracked ; there is intense thirst, and constant sickness, with occasional vomiting of a blackish fluid ; the motions are dark and offensive, and occasionally mixed with blood ; and bleeding sometimes takes place from

the nose. About the second or third day the characteristic external marks of the disease begin to show themselves. Darting pains in the armpits, groins, or neck, indicate the commencement of the buboes, or glandular swellings, and carbuncles. In favourable cases these swellings are bright red ; in more dangerous ones livid or purple. In favourable cases the crisis or turning point is by profuse sweating, and bursting of the swellings. In unfavourable cases the skin remains hard and dry ; low muttering, delirium, and difficult breathing set in ; the eye is sunk, and the face wears a ghastly expression ; the buboes do not rise and burst ; the patient becomes insensible, and dies, commonly on the fourth or fifth day, without a struggle. In mild cases the patient can go about his usual occupation, though suffering from swollen glands. In the worst cases the patient never recovers from the first shock, but sinks within twenty-four hours, or as late as the second or third day, before the buboes have shown themselves.

The treatment is that of Typhus Fever, with warm poultices to the buboes and carbuncles, followed by deep cuts with a lancet. Salivation with mercury has been recommended, and where it has taken place seems to have been beneficial. The disease appears, however, to be almost equally fatal under all modes of treatment. The means of preventing this disease are—separation from patients suffering from it during the prevalence of the malady ; an unusually strict observation of all the laws of health ; the avoidance of impure food and water. In the case of ships from infected places, a quarantine of twenty-one days ; and, if having cases of plague on board, twenty-one days from the recovery of the last case.

CONGESTION AND INFLAMMATION.

These names are given to an alteration in the circulation of the blood in any part of the body, in which the little blood channels are enlarged, and contain more blood than natural, but it passes along them much slower than it does in health. Now, as the

blood is the nourishing fluid of the body, it follows that the part in which this change has taken place does not get blood fast enough to nourish it, because the circulation is hindered or stopped altogether, and consequently it is rendered unfit to perform its duties; and if *vital*, or necessary to maintain life, such as the brain, heart, lungs, &c., the patient is in great danger, and death may result; if the part is not vital, such as the eye, ear, &c., there may be permanent derangement, such as partial blindness, deafness, &c. Hence the necessity for attending to a patient as soon as any symptoms appear, so that we may use the best means as early as possible to check the disease, and restore the part to a healthy state.

CONGESTION is a sluggish state of the circulation, with distension of the veins, and a purplish or bluish colour of the skin, which becomes swollen. It generally occurs in the legs, from long standing, and is often attended with dropsy, and ulcers may form. To remedy this the feet must be kept upon a level with the hips, and occasionally rubbed with the dry hands; or a bandage may be applied, as in Fig. 31; and if there are ulcers, they must be treated as described at page 86.

INFLAMMATION is a more active change in the part than congestion. When it is external or visible, there is increased heat, redness, swelling, and pain. It may result in Abscess, Bed-sore, Mortification, and Ulcers, for the description and treatment of which see page 81. When it is internal or hidden from view, you can only know of its existence by General or Constitutional Symptoms, which in healthy persons are known as those of *Inflammatory Fever*, namely—shiverings, succeeded by pain in the head, back, and limbs; sickness and loss of appetite, hot and dry skin, thirst, furred tongue, full, throbbing pulse, scanty, high-coloured urine, and constipation. There is a slight aggravation of the symptoms towards evening, and a slight remission in the morning; the sleep is disturbed, and the patient is somewhat delirious. In severe or extensive inflammation, or in unhealthy persons, the symptoms are those of *Constitutional Irritation*, characterized by extreme anxiety and restlessness, hurried

breathing, shiverings, low muttering, delirium, and, in fatal cases, death by exhaustion.

The causes of Inflammations are—injuries, exposure to cold and heat, sitting in damp clothing, drinking and dissipation, general debility, or full habit of body.

The treatment of Inflammation has undergone great changes during the last fifty years. Formerly, doctors used to bleed from the arm, salivate, purge, and blister to a great extent, besides starving their patients; now, they bleed only by cupping or leeching, purge moderately, salivate and blister very seldom, and allow plenty of fluid but nourishing diet, and perfect rest.

INFLAMMATION OF THE BRAIN.

The symptoms are—very severe pain in the head, extreme sensibility to light and sound, wild expression of countenance and staring of the eyes, peculiarly hard and rapid pulse, restlessness, parched tongue, flushed face, and a rapid flow of ideas, with wildness of talk. Under the influence of this disease, especially when aggravated by some trouble of mind, shipmates have often done each other an injury, and even taken life. Whenever any tendency to such acts is manifested by *any one on board*, firm but temperate restraint must be used, to prevent mischief. This is the more necessary, as the complaint does not always show itself by actual raving madness.

Active inflammation of the brain usually terminates fatally within four days. In a few instances it ends favourably, in inflammation of some other part, or by some evacuation.

It is brought on by external violence, the abuse of spirituous liquors, violent exercise during exposure to excessive heat, or subjecting the head, uncovered, to a vertical sun in tropical climates. When the disease arises from this last cause, it is called “Sun-stroke,” which is sometimes instantly fatal.

Purgatives are to be employed, as the following:—Calomel (No. 53), six grains, and Jalap (No. 54), ten grains, mixed in

syrup, or any other convenient form ; or two ounces of Epsom Salts. The heat of the head must be allayed by cold water, constantly applied with towels, or ice applied in bladders ; after which blisters may be applied to the nape of the neck and to the temples with advantage. The feet should be bathed in warm water, and poultices applied, of equal parts of mustard and linseed meal, or oatmeal. The patient must subsist on toast and water, or barley-water, gruel, and beef tea.

It is necessary to observe that care must be taken to avoid mistaking this disease for Delirium Tremens, or Blue Devils, the treatment for which is very different.

INFLAMMATION OF THE THROAT, or QUINSY.

This disease begins with shiverings, followed by flushes, pains in the back and limbs, and a sense of fulness, heat, and dryness in the throat, with pain and difficulty in swallowing and speaking. The tongue is coated with a white, creamy fur, and the tonsils become swollen, so that no solid food can be swallowed, and liquids often return by the nostrils ; there is a constant discharge from the mouth of thick spittle ; the breathing is rendered difficult, and there is some danger of suffocation. It is very common for an abscess to form in one or both tonsils, which bursts into the mouth. While it is forming, the pain will be much relieved by hot linseed poultices round the neck ; and gargling the throat frequently with warm water, after it has burst, will do good. Attention must be paid to the bowels, which should be opened with a dose of Calomel (No. 53), or Black Draught (No. 4). A gargle of Nitrate of Potash (see No. 30) should be used frequently, or a few grains of the powder allowed to dissolve in the mouth. Nothing but fluid and nourishing diet must be allowed, on account of the pain in swallowing ; and the patient will find he can swallow half or three-parts of a tumblerful quickly, without any more pain than taking one or two table-

spoonfuls would cause. If the inflammation and swelling does not subside in the first twenty-four or forty-eight hours, give an emetic of Ipecacuanha Powder (No. 24). This disease is usually caused by cold; drinking cold fluids while the body is heated; swallowing acid and irritating substances. It lasts from five to seven days.

INFLAMMATION OF THE LUNGS AND PLEURISY.

These diseases are so very similar, that the same treatment may be used for both. They are attended with thirst, pain in the side, great difficulty of breathing, and strong inflammatory fever; the tongue is white, and the pulse quick and wiry. In Pleurisy there is always a very severe pain, generally in the left side, just below the nipple, increased by coughing or drawing in the breath, and shooting towards the breast-bone and shoulder-blade; there is also constant inclination to cough, interrupted by the pain it causes, in consequence of which a viscid mucus collects in the air-passages, and causes a wheezing called *rattles*. The attack commences with weakness, chilliness, and headache. Timely use of the warm bath, and care to prevent checking perspiration afterwards, frequently cuts short this very serious disease. The bowels should also be moved with an ounce of Epsom Salts, and barley-water or linseed-tea freely drunk.

The best treatment at the commencement is as follows:—Dissolve four grains of Tartar Emetic (No. 55) in half a pint of hot water; a fourth part of this mixture to be taken every ten minutes, until vomiting is freely produced. Let the patient afterwards drink copiously of warm water, to keep up the tendency to sickness, which will tend to cut short the attack. Blister the side, or apply a mustard poultice, and keep the patient warm. Let the bowels be freely opened with three grains of Calomel (No. 53) and twenty grains of Jalap (No. 54), or a Black Draught (No. 4). Allow a nourishing but fluid diet, such as milk,

arrowroot, gruel, beef-tea, &c. If the patient is very weak, and the spitting is brown, or rust-coloured, give from four to twelve ounces of brandy every twenty-four hours, until the spitting ceases to contain blood and the skin to be hot. Linseed meal poultices should be applied to that part of the chest where the pain is most felt, and changed every six hours. As this is a very fatal complaint, the patient must be carefully nursed, as directed under Fevers. After the acute symptoms have subsided, a troublesome cough, attended with spitting of white, frothy, or mattery expectoration, often remains, which may be relieved by a Cough Pill (No. 38), or ten grains of Dover's Powder (No. 15) at bed-time, and two tablespoonfuls three times a day of this mixture:—Paregoric Elixir (No. 36), and Elixir of Vitriol (No. 20), of each half an ounce; Treacle one ounce, and water six ounces. This disease lasts from four to ten days, and is caused principally by exposure to wet and cold.

BRONCHITIS, OR COUGH.

This complaint, when it is Chronic, is known as "Winter Cough," and is not much attended to by seamen; it is characterized by severe cough, with a variable quantity of frothy white, and sometimes mattery expectoration; there is also shortness of breath, with wheezing, restlessness, and sweating at night. It may be prevented by attention to clothing during exposure to cold or wet, wearing flannel next to the skin, avoiding ardent spirits, and all strong stimulants. The treatment is the same as for the last complaint. During the recovery from lung diseases, the food should be good, and wine allowed. Great care must be taken to prevent a relapse; too sudden exposure to wet and cold would be very likely to occasion a most dangerous return of the attack, to avoid which the patient should return gradually to his usual food and occupation.

INFLUENZA.

An epidemic disease which takes the form of a common cold in the head, nose, and air passages, accompanied by fever, and followed by great weakness, and frequently by inflammation of the Lungs and other organs. It sometimes appears on board ships at sea where there has been no communication with the land for months. The patient should be put to bed, and treatment begun with a dose of Castor Oil, followed by a grain of Quinine every four hours. The Saline Mixture (No. III.) should have one dram of Dover's Powder (No. 15) added to it, and given according to directions. Soda and milk is the best diet. The attack usually lasts four or five days, and as great weakness usually results, Tonics (No. VIII.) and a generous diet should be continued for a fortnight.

ASTHMA.

This is a chest complaint, but is not at all of an inflammatory kind, although it often accompanies Bronchitis. It is characterized by sudden attacks of shortness of breath, with great wheezing, and a dry cough; countenance flushed, great anxiety, hollow voice, and gasping for breath. After a time the breathing becomes easier, and a quantity of thin frothy expectoration comes up, and the patient speaks and coughs with greater ease, and, feeling in every way relieved, falls asleep.

A smart emetic (No. 24) relieves the patient quicker than any other remedy; a cup of hot, strong coffee, or a glass of grog drunk as hot as possible, often do good. The bowels should be kept open with Castor Oil, Purging Pills, or Black Draught. Feed the patient well, and give Cough Mixture. See Receipt No. IX., to which 2 drams of Chloric Ether (No. 66) should be added to the bottle.

INFLAMMATION OF THE LIVER.

There are two causes which powerfully predispose seamen to this disease ; the excessive heat of the climates they visit so frequently, and their free indulgence in spirituous liquors.

The symptoms are, pain in the right side, under the short ribs, which is increased by pressure ; sometimes it extends to the chest, then resembling pleurisy, and often there is pain in the right shoulder ; irregular state of the bowels ; inability to lie on the left side ; and a dry cough.

The inflammation, if not reduced by the seventh or tenth day, usually ends in the formation of matter. In the former case, a bilious looseness ensues ; if an abscess form, it may break inwardly into the chest or abdomen, or outwardly through the skin.

Every exertion should be made to reduce the inflammation as early as possible. Let a large blister be formed over the liver, or part affected with soreness, and abstain from solid food and stimulants. If an abscess form and break, the patient's strength must be supported by Quinine and wine. If the abscess point outwardly, and threaten to break through the skin, the part should be poulticed ; it will be preferable to allow it to burst without interference, as the method of opening it without doing mischief can be understood only by a surgeon.

The Quinine Mixture, prepared as directed for Ague, will be found very serviceable.

INFLAMMATION OF THE BOWELS, OR DRY BELLY-ACHE.

This is one of the most alarming complaints which can occur on board a ship, and requires *immediate medical assistance*, if to be had, and, at all events, the utmost promptitude, as, should the inflammation be not soon relieved, mortification of the bowels commences, and soon ends in death, which the utmost care and skill cannot always prevent.

This disease may be brought on by neglected colds, injuries of the belly from blows, wounds, &c. All the symptoms are some-

times produced by a neglected Rupture (page 92), and they resemble those of Colic (page 138).

Inflammation of the Bowels, like the Vomiting and Purging Sickness, comes on with a previous cold fit ; but the cold fit which indicates Inflammation of the Bowels is much more severe. The pain is unceasing, from the very beginning to the termination of the inflamed state. The whole of the belly becomes intolerably sore to the touch ; vomiting continues at intervals throughout the disease ; pulse feeble, but quick and hard ; tongue dry and foul ; the bowels are generally confined and inactive.

The treatment is essentially the same as that recommended for a "strangled" rupture (page 94). Very light linseed poultices, or turpentine stupes, to the belly ; an Opium Pill (No. 39), every four hours ; Effervescing Mixture (No. 3), to stop the sickness ; an occasional clyster to move the bowels ; but on no account is any purgative medicine to be given while the belly is painful and tender. The food must be all fluid, and given often, and in small quantities at a time ; it should be strong and nourishing ; weak brandy and water, or wine and water, may be allowed. For the regulation of diet during recovery, see Typhoid Fever (page 118).

INFLAMMATION OF THE EYES.

The eyes are red and painful, unable to bear the light, attended with headache and fever, itching and burning of the eye, and sometimes a sensation as if sand were lodged under the eyelid. If it is occasioned by any irritating substances in the eye, these must be immediately removed. Spirits, malt liquor, stimulating food and drinks of all kinds, must be carefully avoided, and the eye kept lightly covered. A mild purgative, such as Black Draught, should be given. In all severe cases, when leeches can be obtained, three or four applied to the temples, and *not too near the eye*, will do great good. To take away the heat of the eye, a soft linen rag, dipped in water, at first blood-warm, but afterwards cold, should be frequently applied. The bowels may be well opened with

six grains of Calomel (No. 53), and twenty grains of Jalap (No. 54); afterwards the bowels must be kept open by gentle doses of Epsom Salts (No. 17). The eyes may be bathed frequently with a lotion composed of a pint of warm water and one teaspoonful of Laudanum (No. 26); a warm poultice should be applied to the eyes at night, and both of the eyes be protected from the daylight by a dark shade over them. When the pain has subsided, the following lotion applied three times a day will restore them to their natural strength:—White Vitriol (No. 46), twenty grains, dissolved in half a pint of cold water.

In obstinate cases, a blister behind each ear should be applied. The diet must be low, as in any other case of inflammation or fever. There is sometimes a small ulcer at the roots of the eyelashes; this should be gently washed with Alum-water, by means of a hair pencil or fine linen cloth. Alum (No. 1) makes a useful wash for sore eyes, used in the proportion of twenty grains to half a pint of pure water.

EPILEPSY, OR FITS AND FALLING SICKNESS.

A liability to this disease utterly disqualifies a man for a seafaring life, as he cannot venture aloft without the risk, amounting almost to a certainty, of falling a corpse on deck; or he may be attacked while holding a light among combustible matter, and set fire to the ship.

The attack is sudden; the patient falls down in convulsions, with a peculiar scream; the pulse is suspended or very irregular, the mouth is closed and frothy, the hands clenched, the eyes open and distorted, the face often turns black, and the tongue thrust out. During the fit the limbs are strongly contracted, and the whole body twists and works convulsively, with such violence as to require three or four strong men to hold the sufferer.

In a few minutes the fit abates, but is shortly renewed. After three or four returns, the patient sighs, and, although continuing

senseless, passes into a deep sleep. On awaking, he has no recollection of what has occurred, but feels heavy and stupid.

The only thing to be attempted *during a fit* is to place the patient in a cool, airy situation, with his head elevated, and to protect him from bruising himself, which would aggravate the attack; cold water should be thrown on the face. Any tight clothes about the patient should be loosened; putting a piece of soft wood between the teeth, if possible, will prevent biting the tongue; *no cup or glass should be given him* to drink from, as it is almost certain to be broken, and cut the mouth.

In some instances it is preceded by pain in the head, unquiet sleep, noise in the ears, and a sensation of cold commencing in one of the limbs, and creeping upwards until it reaches the head, when the patient falls into a fit. When the sensation of cold is first felt, a piece of tape should be put tight round the limb, and twisted like a tourniquet with a small stick kept in the tape for the purpose. The tight pressure need not be continued more than a minute; and this simple apparatus may be so applied as to cause no impediment to labour. Patients have, by this means, averted the fits for months, who, without it, were attacked three or four times a week.

JAUNDICE.

This disease generally arises from, or accompanies, some other complaint, such as costiveness, disease of the liver, or the fevers peculiar to warm climates. It is characterised by a yellowness of the skin and the whites of the eyes, a bitter taste in the mouth, pain or uneasiness in the right side, the stools clay-coloured or whitish; urine of a deep red colour; the bowels are generally costive. It comes on with disinclination to work, loss of appetite, acidity in the stomach, indicating a deranged state of the bile. When it attends a fever or liver complaint, it must be treated in the same manner as laid down in the original disease. It sometimes makes its appearance soon after a violent pain in the bowels; this is caused by a concretion, resembling a stone, lodged in the biliary ducts.

In recent and mild attacks of the bilious complaint, an Emetic (No. 24) may be taken, working it off with a plentiful supply of warm water, followed by a dose of Antibilious Pills (No. 37), or Calomel and Jalap, worked off with Epsom Salts or Castor Oil ; but in cases attended with much pain and a great degree of fever, by which it is certain that the system is in an inflammatory state, an Emetic would be highly injurious. In this stage of the disease, the bowels must be well opened, and, if there is much fever, a pint of warm salt-water may be given as a clyster, and the patient put into a warm bath every second night, and the following medicine :—10 grains of Bicarbonate of Potash in water every four hours. When the severity of the disease is subdued, but still existing, give a Mercury Pill (No. 37) every night until the mouth is slightly sore. The diet must be plain, and no wine or spirituous liquors allowed ; salt meat, coffee, or anything of an acid nature must be avoided : vegetable diet, and keeping the bowels regular and open, will have the best effect in restoring the patient to health.

The obstruction to the passage of the bile from the liver to the intestines, which is the *immediate* cause of the Jaundice, may arise from the enlargement of the liver, such as often succeeds Remittent and Intermittent Fevers, or from chronic inflammation of the liver. In these cases the enlargement of the liver can generally be felt on pressure.

COLIC.

This complaint is known by a violent pain and distension of the bowels, attended with obstinate costiveness, and a peculiar sense of twisting around the navel, but no soreness upon pressure.

As soon as possible give the patient forty drops of Laudanum (No. 26) in a little warm brandy and water, and foment the belly with flannels rung out with hot water ; or bottles of hot water, bags of hot salt or sand, may be substituted. An injection should also be given, made with two ounces of Epsom Salts (No. 17),

dissolved in a pint of warm gruel ; afterwards, a *large* dose of Castor Oil (No. 10). If these fail, give from five to six grains of Calomel (No. 53) ; as soon as the bowels are opened, relief will be obtained. When such strong doses of medicine have been given and the bowels freely purged, costiveness is apt to follow. To prevent this, *small doses* of Castor Oil (No. 10) or Salts (No. 17) should be taken, which will bring the bowels again to their natural state.

For a *slight* Colic or belly-ache, a little raw spirits, a few drops of Peppermint (No. 18), or Essence of Ginger (No. 19), with twenty or thirty drops of Laudanum (No. 26) in a little water, will often be sufficient.

DYSENTERY, OR BLOODY FLUX.

This disease is known by frequent purging, preceded by severe griping pains in the lower part of the belly ; constant inclination to go to stool, without a natural discharge ; and is distinguished from *Diarrhœa* (see page 141) by a straining and uneasy feel, as if the bowels were not emptied, and by the slimy and sometimes bloody stools. In severe cases the patient feels a bearing down, as if the bowels were falling out, and sometimes a part of the intestines does actually protrude. The stools consist of a mucus or slime, often streaked with blood ; when large quantities of blood are lost, it is a dangerous symptom. Seamen often suffer severely from this complaint, which is much more prevalent in hot climates than in cold ones, especially in the rainy seasons. It frequently occurs on board ships where cleanliness and due ventilation are neglected. It is sometimes occasioned by the use of raw pork, and *bad* pork will certainly produce it, also foul water.

An Emetic (No. 24), in most instances, will be very serviceable given in the evening, followed by an ounce of Castor Oil (No. 10) next morning. This should be repeated, with twenty drops of Laudanum (No. 26), every third day, to procure a natural evacuation, which, when obtained, will tend much to the cure. Give a sixth part of the following powder, three or four times a day :—

Dover's Powder (No. 15), Nitrate of Potash (No. 30), of each a dram, and six grains of Ipecacuanha (No. 24), well mixed. Clysters of warm water do good by clearing out the bowels.

If the pain be intense and long-continued, with much looseness of the bowels and inclination to go to stool, one or two grains of Opium (No. 39), or thirty or forty drops of Laudanum (No. 26), may be given at bed-time. At the commencement of this complaint, Opium should not be given by itself. The belly ought to be well fomented with turpentine stupes, applied as warm as the patient can bear it. Relief will often be afforded by letting the patient sit over the steam of boiling water, and putting his feet and legs into water made very warm, but not too hot. Powdered Ipecacuanha (No. 24) is now the recognised remedy for this disease, and should be given as follows :—The patient should be put to bed and kept perfectly still ; 20 grains of powdered Ipecacuanha should be given in a small quantity of syrup or water, and nothing should be taken for three hours, except a little ice or water if thirsty. A warm poultice should be placed over the bowels. This treatment should be repeated in eight hours, and mild food, as directed, should be continued for several days.

The diet should be exceedingly mild and simple ; thin oatmeal gruel, arrowroot, milk, beef-tea, and toast-water only, should be allowed for the first few days, or until the purging and severe pain in the bowels have ceased ; afterwards, stale bread, tea, and coffee, or the broth of mutton, chicken, &c., at first thin and unseasoned, but gradually increasing in richness as the disease declines, should constitute the whole diet ; on no account should spices, salt meat, or spirituous liquors be used. The night air should be avoided, if possible.

When this disease appears on board ship, it is of the first importance to prevent its being communicated to all hands on board ; to do this, the most careful attention should be paid to cleanliness. The evacuations of the sick must be immediately thrown overboard, and the buckets washed out.

DIARRHÆA, OR LOOSENESS.

This disease is brought on frequently by improper food, such as unripe fruit and watery vegetables, producing acrid or acid matters in the stomach, or an unusual supply of disordered bile flowing into the intestines. It is also an effect of obstructed perspiration, from exposure to cold. In the Mediterranean it is often caused among sailors by drinking freely of new wine. In other warm climates, as the West Indies, spruce beer and other fermented liquors often occasion it. Sudden changes from the long-continued use of salt provisions to fresh meat and vegetables will cause an attack ; when arising from change of diet, remedies will seldom be necessary, as it generally goes off in a few days.

It is not always to be considered a disease, as it is sometimes evidently an attempt on the part of nature to cure one, and therefore ought not to be checked *too suddenly*, especially if fever be present.

As, however, it is generally the first symptom in an attack of Asiatic Cholera, immediate attention should then be paid (see Directions, page 142). The first thing to be done, if Cholera is likely to commence, is to give an emetic of Ipecacuanha (No. 24), and the following morning give twenty-five grains of Rhubarb (No. 43), and ten grains of Magnesia (No. 29), in a little water with a few drops of Essence of Peppermint (No. 18). Should it continue after this, give twenty or thirty grains of the Diarrhœa Powder (No. 16) every four hours, until the disease is checked. If the complaint arises from cold, five or ten grains of Dover's Powder (No. 15) may be given three times a day, observing not to drink any fluids immediately after, as they are apt to bring on vomiting. If there is much griping pain, without soreness upon pressure on the belly, five or ten drops of Laudanum (No. 26) may be given with the Diarrhœa Powders. Clysters of warm water give great relief in all cases of Diarrhœa.

The diet should be attended to ; boiled bread and milk is the best ; it may consist of rice, sago, tapioca, and barley-water : arrowroot would be preferable, if on board. If there is much

weakness after the attack, the Quinine Mixture (see AGUE) may be given, with a little port wine or weak brandy and water ; light, wholesome, nourishing food, and gentle exercise.

CHOLERA, OR VOMITING AND PURGING SICKNESS.

This complaint, called English Cholera, may be brought on by sudden changes from heat to cold ; indigestible food, as cucumbers, melons, &c., and *unripe* fruits, eaten in great quantities ; poisonous or putrid food, and exposure to noxious air, arising from decayed animal and vegetable matter, especially drinking impure or foul water.

One of the first symptoms frequently is a coldness over the whole frame, but more particularly the lower extremities ; immediately after which, vomiting comes on, with giddiness and great loss of strength ; with more or less purging, and considerable griping pain in the stomach and bowels. Should these symptoms continue for three or four hours, cramps to an excessive degree take place in the lower extremities, commencing at the fingers and toes, and rapidly approaching the trunk. The medicines found most efficacious are Opiates, combined with Cordials ; commencing with thirty or forty drops of Laudanum (No. 26) in a wine-glassful of brandy and water, and continuing smaller doses, from eight to ten drops, at intervals, as the patient's symptoms may require.

During the attack, and for some time afterwards, the patient should take very little of anything fluid, and any necessary drink should be nearly cold. After all the symptoms have subsided, half a tumbler of mulled wine, with a little toasted bread or biscuit, will do good. It is also often necessary, a day or two after the attack, to give a dose of Castor Oil (No. 10), so as to carry off any offensive matter remaining in the bowels. Should there be also a little fever (which is often the case for three or four

days after an attack of this disease), Fever Medicines must be given, with small doses of Seidlitz Powder (No. 52) three or four times a day.

There is a much more formidable disease, caused by the presence in the bowels of the Comma Bacillus discovered by Dr. Koch, and known as CHOLERA MORBUS, or ASIATIC CHOLERA. All the symptoms are very much aggravated in this form of the disease; the features become sharp and contracted; the face, hands, and feet, and, soon after, the whole body, assume a leaden, blue, or brown tint, according to the complexion of the individual; the pulse becomes small, or totally extinct; the skin is cold, and often damp; the tongue moist, but flabby and chilled like a piece of dead flesh; the breathing quick, irregular, and imperfect; sometimes there are rigid spasms of the legs, thighs, and loins; the secretion of urine is totally suspended. Violent purging of a thin liquid, like whey or barley-water, takes place, and is one of the most dangerous symptoms of Asiatic Cholera.

The patient should immediately be laid in bed, wrapped up in hot blankets, and warmth should be sustained by dry heat. Poultices of equal parts of Mustard and Linseed Meal, or Oatmeal, applied to the stomach, particularly when pain and vomiting exist; bottles of hot water, or bags of hot salt, should be kept constantly applied to the soles of the feet, care being taken not to *burn* the feet; white wine whey, with spice, hot brandy and water, half a teaspoonful of Essence of Peppermint (No. 18), or Spirits of Hartshorn (No. 45), in a glass of hot water, frequently repeated; if the stomach will bear it, warm broth, with spice, may be employed. In severe cases, where medical aid is not to be had, Camphor (see No. 8), in doses of 10 grains dissolved in a glass of brandy, or mixed in milk, may be given every two hours, or from twenty to forty drops of Laudanum (No. 26), or even three Opium Pills (No. 39), may be given promptly, with any of the warm drinks recommended. The cramps may be relieved by rubbing the limbs.

By thus vigorously meeting the disease early, a safe cure is comparatively easy. Having succeeded in overcoming the attack, and subduing all the dangerous symptoms, the same treatment may be observed for the restoration to health as recommended for the common, or English Cholera.

The disease, when protracted to the fifth, sixth, or seventh day, seldom proves fatal. When it terminates favourably, there is a gradual termination of the symptoms, followed by sleep, and a gentle moisture on the skin.

The unfavourable symptoms are, strong cramps in the legs or arms ; convulsions ; great prostration of strength ; cold, clammy sweat ; intermitting pulse ; and swelling of the belly.

It is very necessary to point out the precautions to be observed for preventing, as much as possible, the spreading of this terrible disease. All decayed articles, such as rags, cordage, paper, old clothes, &c., should be burnt ; filth of every description removed ; throw overboard immediately all stools passed ; clothing and furniture should be well washed in water and carbolic acid ; cleansing of wood-work should be performed by a strong ley of soap and water ; free and continued admission of fresh air to all parts of the ship and furniture should be enjoined ; also look to the drinking water (see Typhoid Fever, page 119), and use none that has not been well boiled.

Those who inhabit filthy and badly situated places are generally most liable to the infection. The well-clothed and well-fed, by temperance and exercise, may escape it, especially if they can occupy their minds cheerfully ; but the ill-fed and ill-clothed, and also the *intemperate*, whether in meat, drink, or other gratifications, are most assuredly the first and most numerous victims.

CONSTIPATION.

An obstinate costiveness or confinement of the bowels is often aggravated rather than relieved by the use of purgatives. Give two Purging Pills (Nos. 40, 41) every other night for a week ; if this does not succeed, an injection of a pint or a pint and a half of soap and water, with or without an ounce of Castor Oil (No. 10), or Turpentine, 2 drams. Ask any man who complains of Constipation *if he has a rupture*, and if this be the case, treat him immediately as directed at page 94. Do not persevere with purgatives if the above directions fail ; give any sort of fruits (fresh or preserved) if you have them on board ; tell the patient to take a cold bath every morning, and use a clyster of cold water every day. If the constipation is attended with griping pains, treat it as directed for Colic.

INDIGESTION.

This is a very common complaint amongst sailors, and principally arises from the continued use of the same kind of food for a length of time ; they complain of wind on the stomach, and pain in the belly after meals. Give two tablespoonfuls of this mixture twice a day :—Rhubarb Powder (No. 43) two drams, Bicarbonate of Soda (No. 3) three drams, Essence of Ginger (No. 19) one dram, water 6 ounces, and a Mild Purging Pill (No. 41), if necessary, for three nights in succession.

SEA SICKNESS.—This distressing and sometimes fatal affection is caused by disturbance of the circulation of the blood through the brain, produced by the rolling and pitching of the ship, and intensified by the vile odours generated in close and badly ventilated cabins and forecastles. It is useless to give medicine, except perhaps an occasional dose of a purgative. The best treatment is plenty of fresh air—on deck if possible—and the regular administration of small quantities of fluid nourishment, such as teaspoonful doses of strong beef-tea, with a little Lea

and Perrins' Worcestershire Sauce, or a pinch of red pepper. If extreme weakness result a small quantity of brandy may be given; but as a general rule spirits are harmful.

HEART DISEASES.

These complaints are mostly difficult to discover. The general symptoms are :—Shortness of breath, with or without cough, pain about the left nipple, with fluttering of the heart, and great restlessness at night, and a swelling of the legs, purse, and sometimes of the body, commonly called dropsy. Dropsy, however, often exists in Chronic Diseases of the Liver and Kidneys. If there is much pain, put a hot fomentation on the chest, and if the dropsy increases, get the bowels freely open with a dose of Cream of Tartar (No. 11), in a little water, repeating this every third day for about a fortnight, if it does not appear to weaken the patient. Opium must not be given in these cases to procure sleep, and very little can be done, as nearly all varieties of heart disease are incurable:

KIDNEY DISEASES.

These complaints are difficult to detect, and their symptoms by no means easy to describe. Pain in the loins, great general depression, weakness, loss of appetite, a peculiar pale appearance of the skin, and general dropsy (as with Heart Disease), are the chief and only marked signs. If the patient be tolerably strong, keep the bowels very freely open for fourteen days by giving a dose of Cream of Tartar (No. 11), in a little water, every other morning. Should the swelling not be reduced, or the pain relieved, by this treatment, you can do nothing more to aid strength than by feeding the man tolerably well.

Heart and Kidney Diseases are the most hopeless kinds of internal disorders, and in the vast majority of cases your patients will be fit for no more active work than sail-making, cleaning brass-work, quarter-master's duty, or giving a hand to the cook.

FITS.

Under this term are commonly included those diseases in which the person is attacked suddenly, and falls, with or without screaming and struggling, into a state of helplessness and insensibility. In all kinds of Fits observe strictly the following rules :—

1. Give the man plenty of air, and loosen all clothes about the neck and body.

2. Do not attempt to make him swallow anything at all, until you are convinced that he is sensible.

3. Do not use more violence than is absolutely necessary in restraining the struggling movements.

4. Hold the stopper from the bottle containing the spirits of Hartshorn (No. 45), just under the nose for a few moments, so that the vapour may pass into the nostrils. Care must be taken not to spill any on the skin.

5. If the man grinds his teeth, get a cork or piece of wood, or the handle of a spoon in between the teeth, so as to prevent the tongue being wounded.

No other rules are required for your guidance, whatever the fit may be. When it is over, get the bowels open with a dose of Black Draught (No. 4), or a clyster of soap and water ; keep the man quiet and on slop diet for twenty-four hours.

SUNSTROKE (HEAD-STROKE).

Caused by exposure to the direct rays of the sun, or it may come on at night, and is then caused by a high temperature in close cabins or ill-ventilated forecastles. The treatment is, send the patient into the coolest place that you can find, get his head shaved, pour cold water over his head, and dash it smartly and frequently over the head, neck, and chest, or rub over with ice, and give an ounce of Castor Oil (No. 10) immediately, repeating the dose until the bowels are freely and thoroughly relieved four or five times ; keep him quiet and on slop diet (see Inflammation

of Brain) for at least two days after, and see that his head is always covered when on deck with a Solah topee. If apparently dead, keep up artificial respiration (see Drowning) for some time.

PALSY, OR PARALYSIS.

By these terms is meant a condition of the body in which the muscles have lost their power, and it may occur in any part of the body, such as the legs, arms, wrists, bladder, &c., and is caused by a variety of diseases, amongst which are apoplexy, injuries to the head and back, slow poisoning by certain metallic poisons, such as mercury, lead, &c. You can do nothing by active medicine, but it is your duty to see that he is kept as clean and dry as possible, so as to avoid bed-sore ; that his bowels are regularly relieved, and that his food is good. No stimulants are necessary. Ask him if he passes his water regularly. If none passes for twenty-four hours, and a warm bath fails to relieve him, you must use the Catheter (page 96), taking care to pull out the wire before introducing the instrument into the yard.

RHEUMATISM.

This disorder is of two kinds, one with, the other without, fever.

In the first, or Acute Rheumatism, the patient complains of severe pains in different parts of his body, particularly the large joints, the pains increasing when in bed, and the joints being red and swollen, the least motion giving great pain ; the tongue covered with a white fur ; great thirst, and fever.

On the first attack, give a dose of Castor Oil (No. 10) or Epsom Salts (No. 17), to open the bowels freely, repeating this if necessary ; then give five grains of Dover's Powder (No. 15), with 20 grains Salicine (No. 65) in a little water every four hours. You must move him very gently indeed, and meddle with his limbs in doing so as little as possible, for the pain of a rheumatic joint,

when roughly handled, is horrible to bear. The inflamed parts are to be fomented with warm water, or hot Chamomile tea, and wrapped in flannel, and the patient should be put between blankets and kept very warm.

The diet must be light, and plenty of warm drink, such as barley-water, gruel, milk, beef tea, &c., should be taken.

When the fever has subsided, give Quinine and nourishing diet. Great care must be taken to prevent a relapse, which frequently occurs.

In the Chronic Rheumatism, the patient complains of fixed, and at other times wandering pains in the limbs, joints, and loins, mostly upon moving, accompanied with stiffness and a sense of cold, but without feverish symptoms. This form of rheumatism seldom affects more than one or two joints at a time. In the treatment of these cases, nourishing food, gentle exercise, wrapping the affected parts in flannel, and rubbing them with the Stimulating Linament (see No. 45), or Opodeldoc (No. 35), twice or three times a day, will afford much relief. When the pain is fixed, blistering the part will be useful; ten grains of Dover's Powder (No. 15) may be taken at bed-time, and a warm bath every second or third night may be used; or Iodide of Potassium, in five grain doses, three times a day in water, or half a dram might be added to a bottle of Saline Mixture (see Receipt No. III.) In long-continued and obstinate rheumatic affections, leeches applied to the part will be serviceable, and blisters kept running, by dressing them with Basilicon (No. 31) once or twice a day.

In approaching a cold climate, and while in that latitude, flannel should be immediately put on next the skin; the master of a vessel should attend to the clothing of his crew, and see that its warmth increases in proportion to the coldness of the weather; he should also, as much as possible, prevent the men's sleeping on damp beds, or in wet apparel, in accordance with the provisions of the Merchant Shipping Act, 1867, which will *prevent* more rheumatism than any captain, mate, or doctor can possibly cure. More sailors are permanently disabled, year by year, from this, than from any other disease.

LUMBAGO, OR PAIN IN THE BACK.

This disease is rheumatism in the loins, brought on generally by exposure to cold when heated ; it sometimes comes on by degrees, but more commonly suddenly ; the patient, on stooping down, feels, in the act of rising, a most acute pain in the small of his back, so severe that he cannot stand upright or walk without great agony.

The loins should be well rubbed with equal parts of Hartshorn (No. 45), Laudanum (No. 26), and Olive Oil (No. 34) mixed together. The back may be fomented with warm water, and if the pain will admit of it, a warm bath would be very serviceable ; the loins should be bound round with flannel (*new* if possible). Give the Iodide of Potassium mixture as recommended in Chronic Rheumatism.

VOMITING OF BLOOD.

This differs very much from *spitting of blood*, which is a symptom of Consumption, in which the blood is coughed up from the *lungs* ; while vomiting of blood proceeds from the stomach, is generally mixed with undigested food, comes away in larger quantities, is usually preceded by a sense of weight and dull pain a little below the pit of the stomach, and a tendency to throw up the contents, but unattended with cough.

It may arise from various causes, a few only of which need be mentioned, the others not admitting of relief. The chief causes among seamen are—habitual drunkenness, swallowing poisonous substances, scurvy, or some external violence, or great strain of the body. If arising from scurvy or poison, the treatment prescribed under the proper head must be used for its cure. If owing to drunken habits, strict abstinence and great quiet must be observed ; as long as the bleeding continues, scarcely any food should be taken, merely drinking the very coldest water that can be had ; ice may be applied to the stomach. Give two tablespoon-

fuls of the following mixture every third hour :—Laudanum (No. 26), two drachms ; Elixir of Vitriol (No. 20), forty drops, or half a teaspoonful ; one or two tablespoonfuls of treacle, and half a pint of water, mixed.

If accompanied by heat of the skin, or other symptoms of fever, or if the complaint be owing to violence or over-exertion, foment the stomach, placing the feet in warm water. The patient's berth should be cool, and all causes of irritation avoided. The day following, give a mild laxative, as of Cream of Tartar, Castor Oil, or a small dose of Salts, to remove the blood from the bowels. Lemonade, &c., should be given for drink. He should subsist for two or three days on light food, as barley, rice, broth, &c.

FAINTING.

This is one form of what are called "Fits," and is produced by sudden loss of blood, by violent or prolonged exertion, by disease of the heart, or by large doses of poisons. When a person is attacked, the sight fails, and objects appear to swim round ; there is a sense of singing or buzzing in the ears ; the lips and countenance become pale ; a cold perspiration bedews the whole body ; the patient, if unsupported, falls senseless to the ground ; the pulse and breathing are almost imperceptible. In some cases not the slightest sign of life can be perceived, the face has a death-like pallor, the limbs are cold, and the eyes closed. Recovery is announced by deep, prolonged sighs, is frequently attended with vomiting and purging, or it may pass into convulsions.

The patient must be laid down with the head as low as the rest of his body, give him plenty of fresh air, and sprinkle cold water smartly over his face and chest ; apply also Spirits of Hartshorn (No. 45) to the nostrils. See Treatment of Fits.

APOPLEXY.

Apoplexy is caused by too much blood pressing on the brain. Elderly men, especially if stout and short-necked, are most liable to be attacked. Intemperance in liquor, full meals, exposure to a hot sun, violent excitement of body or mind, and long stopping or lying with the head down, or anything that tends to drive the blood to the head, will bring it on. Sometimes the person falls down suddenly, motionless, and often insensible; the pulse, at first full and quick, soon sinks; the breathing slow, difficult, and snoring; at other times there is previously violent headache, high fevers and delirium, as in the case of Sun-stroke. The attack is sometimes so severe as to cause instant death, but it is not generally a very common disease among sailors, unless brought on by drunkenness.

The sufferer should *immediately* be removed into the shade, and the air, if necessary, cooled by fanning; let the patient be placed in an upright posture, supporting the head, to prevent any bend in the neck; every article round the neck should be loosened or removed; the head shaved and kept cold by frequent bathing with equal parts of cold water, vinegar, and spirits; if there is any inclination to vomit, it should be assisted.

Bags of hot salt or sand may be applied to the feet, and between the thighs, or the legs placed in hot water; a large blister should be formed on the back of the neck, between the shoulders. Ten grains of Calomel (No. 53), with fifteen grains of Jalap (No. 54), should be given immediately.

Should the patient recover his senses, and the power of using his limbs in some degree return, give smaller doses, as two grains of Calomel, with eight or ten of Jalap; it will then be sufficient to keep the bowels open with Castor Oil (No. 10), Salts (No. 17), or Black Draught (No. 4). The diet should be fluid, but nourishing.

DRUNKENNESS.

More excuses may be made by sailors for indulging in this vice than by any other class of men ; but the diseases arising from drunkenness are many,—the most frequent are brain fever, apoplexy, liver complaints, dropsy, sudden death, and evil accidents, such as bruises, fractures, dislocations, and drowning, as well as the inability of a confirmed drunkard to fulfil his duties properly, even when sober for the time.

In the Frigid Zone, spirituous liquors have, doubtless, often saved the lives of those who have fallen overboard, or have been otherwise long exposed to the effects of intense cold. On reaching a very warm climate, spirituous liquors should be drunk very sparingly, *if at all*.

The symptoms of excess in drinking are nearly those of apoplexy, viz., lying in a state of insensibility, motionless, the face flushed, and snoring, as in a deep sleep. This is a very dangerous state, and may terminate fatally if it be not soon relieved.

The effects of excessive drinking are too often fatal, from the little attention paid to the unfortunate and helpless object. The vulgar notion that *nothing can hurt a drunken man* has formerly been the loss of many a life. From this very erroneous opinion, when a person has become what is termed dead drunk, he is suffered to roll and tumble about, almost without notice. He is then in the greatest danger. The quantity which he has drunk generally begets an inclination to vomit, in attempting which he gets his head downwards, and not being attended to, that situation, added to the tightness of his shirt-neck or neck-cloth, produces suffocation.

The first step should be to loosen anything which is about the neck, and to place the body in a lying position, with the head and shoulders raised ; if the patient is suffered to sit, there is danger of his head hanging down upon his breast, by which the circulation of the blood in the neck is obstructed, and an apoplectic state is brought on. The *head* should likewise be kept cool, and

bathed with cold water, if necessary. During the time that he is so extremely drunk, he must not be left alone, lest he tumble out of bed.

If the power of swallowing remains, the stomach should be emptied by means of twenty grains of Ipecacuanha (No. 24), mixed in a small proportion of water ; or twenty grains of White Vitriol (No. 46) may be given : a feather, or the finger (guarding against the closing of the teeth) should be thrust down the throat, moving it backwards and forwards, or rather from side to side, so as to excite the vomiting, which is often very difficult.

Salt water may be freely given, to encourage vomiting ; and when the stomach is settled, one ounce of Castor Oil (No. 10), or a dose of Jalap (No. 54) and Cream of Tartar (No. 11), may be given, so as to open the bowels freely. When vomiting can be produced, it is a favourable symptom ; but in case it cannot, and the symptoms remain, another emetic should be given.

The thirst and sickness of the stomach occasioned by drinking strong liquors often induces people to remove it by taking what is hurtful. The safest drinks at such times are toast-and-water, or tea ; see also Carbonate of Soda (No. 3) and Seidlitz Powder (No. 52).

THE BLUE DEVILS, OR DRUNKARD'S DELIRIUM.

This disease, also called “ Delirium Tremens,” is a disturbed state of the mind, which in some amounts to madness. The most common cause is excessive drinking, but it may also arise from prolonged anxiety of mind, debility from loss of blood, severe wounds, &c. It is characterised by sleeplessness, restlessness, excitability, and, in bad cases, raving madness. The patient talks incessantly, and has a great anxiety to be doing something. He is timid and suspicious, and fancies that he is surrounded with enemies, or that he is in a strange place, from which he is endeavouring to escape ; trembling of the lips, hands, and limbs is generally present on making any effort to speak or move.

There is profuse perspiration, a moist and slightly furred tongue. The disease does not often prove fatal, but is very apt to recur.

The first necessary step is to get a free action of the bowels. Give a large Black Draught (No. 4), and repeat it in six hours if necessary. Keep a constant watch over the patient if he is at all restless, and not use more actual restraint than is necessary for the man's safety, and that of those around him. If you are very short of hands, and the man is exceedingly and continuously violent, give 20 grains of Bromide of Potassium (No. 62), and 2 drachms Syrup of Chloral (No. 58) every four hours, and follow up with strong beef-tea, with a good pinch of cayenne pepper. Allow beef-tea, eggs, and a few ounces of wine, to keep up the strength of the patient. This complaint must not be confounded with Inflammation of the Brain.

INSECTS, SAND, AND OTHER SUBSTANCES IN THE EYE.

If a grain of sand, an insect, or any small substance get into the eye, it will produce irritation and inflammation, and may even cause dimness, or entire loss of sight.

When the substance lies loosely on the surface of the eye, it may easily be removed by means of a camel-hair pencil dipped in oil; or what is for the most part more easily procured, a bit of paper rolled into the size of a quill, and softened in the mouth. If there is any difficulty in perceiving it, or in removing it when seen, open the eye firmly, turning the upper eyelid outwards, and let an assistant inject warm water freely upon the eye, with the syringe. Dropping Castor Oil (No. 10) into the eye is sometimes efficacious in removing foreign substances, such as sand, &c.

When the substance is fixed in the coats of the eye, an accident frequent among blacksmiths, and termed by them *fire in the eye*, it may be removed by a fine feather, camel-hair pencil, or a bit of rolled paper.

If there has been much inflammation, the eye may be fomented

with warm water, and a poultice applied between two pieces of *very thin* linen, oiled. Give a Purgine Pill (No. 30) at night, and a Black Draught (No. 4) next morning.—*See also Inflammation of the Eyes.*

INSECTS AND OTHER SUBSTANCES IN THE EAR.

The opening into the outer ear, as far as the drum, is only about half-an-inch, and is defended by a sort of down, and by a kind of soft wax. Bugs and other insects sometimes creep into the ear, and occasion much uneasiness. Insects may be killed by dropping in a little Olive Oil (No. 34). Peas, and such small hard substances, must be extracted by means of a pair of small forceps, or the *head* of a bent pin ; or, better still, by injecting lukewarm water with a syringe until the substance comes out.

TOOTHACHE AND GUM-BOIL.

There is sometimes a difficulty in deciding whether the pain proceeds from a decayed tooth or not, as the jaw is liable to gum-boil, rheumatism, &c. For the real toothache, extraction will be the only certain cure, but in most cases it cannot be done when at sea ; other remedies may then be had recourse to. Should the pain follow exposure to cold, it may be removed by taking opening medicine, and then inducing perspiration by the following method—viz., placing the feet in hot salt water ; going immediately to bed ; being covered with plenty of bed clothes, after taking ten grains of Dover's Powder (No. 15). If the pain comes on at intervals, it is probably Neuralgia : in that case give ten grains Quinine twice a day.

Should the tooth be decayed, a small piece of cotton wool or wadding dipped in Carbolic Acid (No. 9) may be put into the hollow, and will in most cases give relief. Try Laudanum in the

same way. Each and all of these remedies (except extraction) occasionally fail ; but in case of necessity they may be tried.

GUM-BOIL may arise from exposure to cold, the use of Mercury, or injury to the part ; it may be easily distinguished from tooth-ache by the swelling of the face, which is sometimes so great as to close the eye of the affected side. A swelling will be found in the part where the gums and inside of the cheek join, which, on being touched, is very painful. Relief will not be obtained until the matter which it contains has escaped ; it may be let out (the sooner the better) by pushing a lancet into the swelling. The formation of matter, and the swelling and pain, may often be prevented by lancing the gum on the first appearance of the complaint.

If it is necessary to ripen the boil, a few Chamomiles (No. 7), rolled up in a clean linen rag, and steeped in hot water, may be placed between the cheek and the swelling ; a roasted fig placed on the boil would be of use in relieving the pain ; the outside of the cheek may be fomented with hot Chamomile tea, and poulticed. The bowels should be freely opened with Epsom Salts.

When the boil has broken, the mouth should be frequently rinsed out with water, as warm as can be borne. The day after the mouth may be washed with alum-water, to heal the wound.

SKIN DISEASES.

These complaints are very numerous and complicated ; they can only be properly understood by a medical man. It will only be necessary to mention here a few common forms which are found amongst seamen.

ITCH.—This contagious disease is caused by dirty habits as to clothes and person. The eruption consists either of little red pimples or small bladders of water, and is usually found between the fingers, on the wrists, inside the arms, and the bends of the joints, but it may affect any part of the body, particularly

the arms, legs, and buttocks. The disease is accompanied throughout with most distressing itching, which increases towards evening, and at night. After the patient has washed well with soft soap and warm water, make him, every night, smear all the affected parts of the skin with Sulphur Ointment, made as follows:—Mix thoroughly two ounces of Sulphur (No. 47), with eight ounces of lard, Simple Ointment (No. 33), or any other grease that is procurable, and let him wear the same clothes, keeping him in a greasy state until all sense of itching or desire to scratch has passed away, which will generally be in two or three days. Then give him a thorough scrubbing with soft soap and water, and a change of clothes. The man should, as far as is practicable, lie apart from the rest of the crew. Burn all his bedding and greasy clothes when he is well, if you can afford to do so (if not, let them be well scalded or boiled), as thereby you may save a round of the disease among your hands. There is a form of Skin Disease, common among the crews of ships trading to the East, viz., Dhoby's Itch. It is very troublesome to cure. The best treatment consists of rubbing some Goa Powder, mixed with a little brandy, over the parts affected once every two days.

LOUSINESS.—This disease, like the Itch, is attended by an eruption and intolerable itching, which is caused by lice running about and biting the skin. These vermin live on all parts of the body, particularly where there is much hair, among which their eggs, called *nits*, can be readily observed. They quickly appear where the cleanliness of the body and linen is neglected. The body ought to be well washed with soft soap and water, and small quantities of Mercurial Ointment (No. 32) rubbed in for two or three nights; then another wash, and a clean change of linen.

RUNNING SCALD, OR HUMID TETTER.—This is an eruption of small bladders, crowded together on broad, irregular patches of bright red skin, accompanied by severe tingling and smarting; the fluid in the little bladders soon becomes thick, and is discharged, and dries into thin, yellowish-green scabs. The eruption often spreads, and may last from a week to a month, and sometimes much longer, when it is chronic. The causes of this disease

seem to be intense heat and irritation of the skin, from blisters, powder, &c. The best treatment is simple diet, warm baths, water dressing, and bathing the affected parts with thin gruel, or a lotion made with Carbonate of Soda (No. 3) two drachms, and water a pint. Quinine Mixture will do good when the disease has lasted a long time, and Simple Ointment (No. 33) may be applied on Lint.

SHINGLES, OR TETTER.—This is a mild complaint, and not so troublesome as the preceding one. It is an eruption which generally appears upon the lips, or in the form of a girdle half round the body. There is sometimes slight fever, and it is preceded by sharp, darting pains. It generally lasts from a week to a fortnight, and depends upon cold, indigestion, &c. Gentle aperients are all the medicines required, as the disease always cures itself. Simple Ointment (No. 33) will relieve the itching.

PRICKLY HEAT is an eruption of small, hard pimples, sometimes of the colour of the skin, sometimes red, generally arranged in patches or clusters, accompanied by severe itching. Its most common situations are the hands, arms, neck, and face, but it may attack other parts of the body. It is common in hot climates and arises from extreme heat; it also arises from jaundice, disorders of the stomach and bowels, and abuse of ardent spirits. The best treatment is brisk purgatives, low diet, and for medicine, Nitrate of Potash (No. 30) and Sweet Spirits of Nitre (No. 44), given every four hours. The rash may be bathed with a lotion made with Goulard's Extract (No. 22).

NETTLE-RASH is an eruption, resembling in appearance, and in the intolerable itching which attends it, the stinging of nettles. The spots often appear suddenly, especially if the skin be rubbed or scratched, and seldom last many hours, sometimes not many minutes, but vanish to appear in another part. Sometimes the rash assumes the form of long wheals, as if the part had been struck with a whip or cane, and there may be more or less feverishness. In some persons the eruptions last only a few days, in others many months, appearing and disappearing at intervals. It is caused by eating shell-fish, mushrooms, cucumbers, and salad,

also by taking turpentine and copaiba. The treatment, if caused by irritating food, is an emetic of Ipecacuanha (No. 24), followed by a gentle aperient. The smarting may be allayed by a lotion of Goulard's Extract (No. 22).

W O R M S.

There are three kinds of worms which live inside the bowels. They are a great annoyance, and give rise to a gnawing sensation in the belly, and irregular action of the bowels ; a variable, and sometimes excessive appetite, foul breath, and furred tongue. There is often itching at the nose and fundament. There can be no doubt of the presence of the worms when they are seen in the stools, and if they are not attended to they may continue for months, and damage the constitution. The best means of preventing them is to see *that all meat is thoroughly cooked, and not eaten half raw.*

ROUND WORMS.—These are common in children. In size they vary from half a foot to a foot in length, and about as thick as a small pencil or pen-holder. The best proof of their presence is when they are seen in the stools. A brisk purgative, such as Jalap (No. 54) and Calomel (No. 53), proportioned according to the age; will often get rid of them ; or a clyster of half a pint of sea water night and morning.

THREAD WORMS.—These are from a quarter to half an inch in length, and resemble in appearance little bits of white sewing cotton. The treatment is the same as above.

TAPE WORMS.—These are more common among sailors than others, on account of the quantity of pork they eat (which often contains the eggs of the worms). They are flat, and about half an inch wide, and from twenty to forty feet in length ; they are divided by cross-marks into "joints," or small pieces, which come away in the stools. The best way to get rid of them is to take an ounce of Castor Oil (No. 10) over-night, and half an ounce of

Oil of Turpentine the first thing in the morning, fasting, and then a second ounce of Castor Oil two hours afterwards. No food should be taken while these medicines are acting.

DIRECTIONS FOR RESTORING SUSPENDED ANIMATION,

THAT IS, APPARENT DEATH.

Lose no time ; but do things quietly and orderly. Avoid all rough usage, crowding, and hurrying.

Never hold up the body by the feet ; nor shake nor roll it, nor rub with salt or spirits. Do not inject tobacco-smoke, or infusion of tobacco, nor attempt to take away blood.

In all cases of apparent death, three objects ought to have immediate attention :—

First,—To remove every hurtful cause. Second,—To restore breathing. Third,—To regulate the temperature of the body ; observing that the strength and heat of all the remedies and means, so as to be kept at about *blood-heat*, is important.

If the *mouth* be closed, it should be opened, if possible, to allow any fluids in the *mouth* to escape freely, and at once. It is *not* water getting into the *lungs* that causes death from Drowning, but want of air.

When the body has been under water for ten or twenty minutes, there is little hope ; but all possible means should be persisted in for at least two hours, and if *any signs* of returning warmth or life appear, for much more than double that time.

Warmth of the body and slight movements are the surest symptoms of life ; while even the *stiffness* of the body is anything but a *certain* sign of death.

On restoration to life, one *teaspoonful* of warm water may be given, to try whether the power of *swallowing* has returned ; and if *quite sure* that it has (and even then, only occasionally, and in small quantities), warm ginger tea, spiced negus, warm ale, or a little weak spirit and water. *Nothing* should be given inwardly

by the mouth, until the power of swallowing is *quite restored*; but, on the contrary, every precaution taken to keep both the mouth and nostrils free from *mucus* and froth by constantly and carefully wiping it away.

When recovery seems established, he should be put to bed in warm blankets, and a strict watch kept for some hours; any disposition to sleep should be encouraged except in cases of apoplexy, and excessive intoxication. Great care is requisite to maintain the restored vital actions, and at the same time prevent undue excitement, causing fever. After a few hours, he will suffer from severe headache and fever, which must be relieved by gentle purgatives, with low diet. An emetic, made by mixing a table-spoonful of mustard in a tumbler of water, may be given.

APPARENT DEATH FROM DROWNING.

With the least possible delay, even as soon as the patient is received into a boat, he should, *without jolting*, be laid *on his right side*, on a plank or mattress, with his head uncovered, and a little raised; the wet clothes must be quickly removed, even by cutting them open; the water let out from the mouth by opening the jaws; the mucus removed from the mouth and nostrils; the body rubbed dry, and then covered immediately with spare dry clothes, until warm blankets are ready to wrap the body in. A stimulating clyster, consisting of either turpentine, mustard, pepper, ginger, to half a pint of warm water, is advisable, and might early be administered.

Lay the body, after being stripped, on a table or mattress, turning it on its side and belly alternately, two or three times, pressing the belly and chest, so as to force out any water that may have collected in the stomach and throat. Lay it then on the back, press the chest and belly strongly, and ascertain whether air is forced out of the mouth or nostrils. This can be shown by the flame of a candle or thin strip of paper being held in front of the mouth. If air does not pass, pull the tongue outwards with

the assistance of a towel or a handkerchief, and mop out the back of the mouth and throat. Should air now pass, proceed with the following simple method for imitating natural breathing, recommended by Dr. Bain, of Blackwall, and stated by the Medical and Chirurgical Society of London to be the most efficient plan.

While one person is holding the patient's ankles firmly, let another, standing at his head, put his hands into the armpits from the front, and pull the chest towards him with a certain degree of force. This is the best and easiest way of getting air into the lungs. Now relax the pull, and wait a few seconds, repeating this simple movement, so as to imitate natural breathing, about the rate of fifteen times in a minute.

While that is being done, let heat be applied in any convenient way, such as warm flannels, bottles of hot water, &c., to the chest, sides, and between the thighs and legs; also rubbing with the hands or warm flannels, but not too violently, for cases have occurred where the skin has been chafed off, and the patient suffered horribly after recovery. It is wrong to put the person in a hot bath; but if one is used, the water should only be moderately warm, for heat applied too quickly destroys life.

Should air not pass freely into the chest, so that the above method does not succeed, then if a pair of common bellows be at hand, blow them twice or oftener, to clear out any dust that may accidentally be in the nozzle; then apply the pipe carefully to one nostril, while *the other nostril and the mouth* are carefully closed by an assistant, who should with his other hand draw down and gently press backwards the upper part of the windpipe (known as the "apple" in the throat of man), in order to allow a more free admission of air to the lungs, when the air is passing from the bellows into the windpipe. Blow the bellows *gently*, and inflate the lungs until the breast is a little raised. The mouth and nostril should then be set free, and a moderate pressure made with the hand upon the chest, thus imitating the natural action of breathing, by gently blowing into and afterwards compressing the chest, about fifteen times in each minute. (These actions

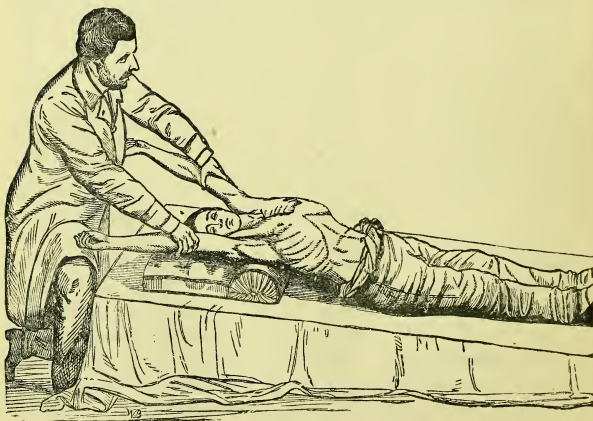
should be imitated upon living persons in good health, that every one may be sufficiently practised *in time of need*.

A ready plan, but more defective than using the bellows, is managed by taking a deep inspiration, and instantly blowing through the mouth or nostrils of the body, closing whichever is free with the one hand, while the windpipe is handled, and then the chest is compressed, with the other hand.

If there be a little breathing visible, imitate it and assist it by pressing the belly rather upwards, and then the ribs downwards, alternately, *carefully attending to THE RIGHT ACT at the RIGHT TIME*—not to depress the chest while the sufferer is inhaling. Hold smelling-salts or hartshorn, *occasionally*, to the nostrils, and tickle them with a feather.

Should these efforts not prove successful in the course of from two to five minutes, proceed to imitate breathing by Dr. SILVESTER's method, as recommended by the Royal Humane Society.

Place the patient on the back on a flat surface, inclined a little upwards from the feet ; raise and support the head and shoulders



I.—INSPIRATION.

on a small firm cushion, or folded article of dress, placed under the shoulder-blades.

Draw forward the patient's tongue, and keep it projecting beyond the lips ; an elastic band over the tongue and under the chin will answer this purpose, or a piece of string or tape may be tied round them, or, by raising the lower jaw, the teeth may be made to retain the tongue in that position. Remove all tight clothing from about the neck and chest, especially the braces.

To Imitate the Movements of Breathing.—Standing at the patient's head, grasp the arms just above the elbows, and draw the arms gently and steadily upwards above the head, and *keep them stretched upwards for two seconds.* (*By this means air is drawn into the lungs*), see Engraving I. Then turn down the patient's



II.—EXPIRATION.

arms, and press them gently and firmly for two seconds against the sides of the chest. (*By this means air is pressed out of the lungs*), see Engraving II.

Repeat these measures alternately, deliberately, and perseveringly, about fifteen times in a minute, until a spontaneous effort to respire is perceived, immediately upon which cease to imitate the movements of breathing, and proceed to *Induce Circulation and Warmth*.

The foregoing two illustrations show the position of the body during the employment of Dr. Silvester's method of inducing respiration.

While treating of this important subject, we may remark, that learning to swim *well* is so important to an able seaman, and frequent *bathing*, or regular washing of the whole of the body, is so necessary to health, that both should be as much as possible encouraged. In bathing at sea, if some of the hands cannot swim, or if there be any chance of *sharks*, a sail such as a lower stud-sail, should be got overboard, with the inner haul-yards rove through a port forward, and the sheet through another aft; the outer leaches being hauled out by whips from the lower yard-arms.

If there be only a small number of men, they should bathe to windward, and have a boat to attend them: with a large crew, and boats plenty, they had better go over on both sides, first getting out boats to attend on each side.

The time should be restricted to about ten minutes or a quarter of an hour, because more than that, without *swimming*, is not generally beneficial; the chance of accident is likewise less.

Tricks among the bathers should be most particularly forbidden, and prevented by every means. People unable to swim have been frightened into fits, through letting go the rope they were hanging on by, and drowned, with numbers of able swimmers close by.

One of the great advantages of a sail overboard consists in affording secure means of satisfying every man that salt water is strong enough to keep him afloat (if he will only give it a chance), by letting the sail go more deeply overboard under him, while he, with the back of his head well down in the water, and his face upwards, keeps gently paddling with his hands behind and under

him, and raises his toes out of the water. He will soon be for paddling himself out of the sail altogether, if he is allowed, and can trust his own presence of mind.

It must be borne in mind, when lying in a river, that fresh water is not near so buoyant as salt, and that Tides are dangerous for all but powerful swimmers; also, if bathing on a beach, that the current often sweeps off shore.

APPARENT DEATH FROM STRANGLING OR HANGING.

From the return of the venous blood being stopped by the action of the rope, &c., round the neck, the face is rendered black, the eyeballs start from their sockets, and the nostrils are wider than in natural death.

After the rope, &c., has been removed, the taking of blood from the arm, or even the jugular vein, is advisable, as well as all the other means directed under DROWNING, except artificially warming the body, which will in most cases be unnecessary. The bellows will be the most important agent.

CHOKING FROM ANY SUBSTANCE IN THE GULLET.

If a splinter of bone, a pin, or the like, be accidentally swallowed, and stick in the gullet, it will produce great uneasiness to the sufferer, though it may not be dangerous.

A plentiful draught of water, or twirling round a large goose or swan quill, or anything of similar shape, inserted into the throat, will sometimes dislodge the substance, and make it fall down into the stomach. When the substance is large, and not far down, it may sometimes be drawn out; but if it be too far down for that, it may be pushed down into the stomach with a thin piece of whalebone, having a piece of sponge firmly fastened to the end of it, called a probang. Even after its removal, a roughness or soreness remains, which sometimes makes the sufferer think it still there.

FROM TOO GREAT COLD.

Exposure to an intense degree of cold produces a general numbness, a sort of intoxication : irresistible inclination to sleep soon comes on, with loss of consciousness, and insensibility, and then the patient rarely recovers.

The body should be immediately wrapped in a blanket, leaving the head uncovered, till conveyed to a warm berth, when the clothes must be taken off, and the skin rubbed with snow, pounded ice, or cold water, rubbing *from* the body *towards* the extremities ; to be succeeded by rubbing with cloth dipped in milk-warm water—it being important to restore warmth, *not suddenly*, but very gradually. When no snow or ice is at hand, a cold bath, very gradually heated, may be advisable. When the skin begins to feel warm, the sufferer may be put into a cold bed, and the bellows and other means used, as under DROWNING.—*See* Effects of Cold, page 48.

FROM NOXIOUS VAPOURS AND LIGHTNING.

It frequently happens in these cases, if the person is discovered soon, that the heat of the body is even greater than that of a living person. In this case, good effects have been observed from dashing the face and the whole body with cold water, thrown in small quantities, and with some force. The effect will be still greater if the body be dried at intervals, and then the sprinkling repeated.

Everything must be removed from the neck, and pains must be taken to lessen the quantity of blood collected in the head, by the means recommended under the article HANGING. But if the body, instead of being warmer than natural, should feel cold, or should be gradually turning colder, warmth must be kept up by the means already directed for DROWNING.

POISONS.

The effects of poisons may, in most cases, be known from sudden illness arising from natural diseases, by the following symptoms:—

If a person, previously in perfect health, be attacked, after having taken food or drink, with violent pain in the stomach, burning heat in the throat, a sense of suffocation, and retching and vomiting; or with giddiness, delirium, or raving, and an unusual drowsiness, it may be suspected that he has taken poison. Apoplexy, cholera, and inflammation, frequently occur suddenly, after a meal, but in sudden apoplexy the stomach and throat are not affected; in cholera and internal inflammation, also, there is no burning in the throat before vomiting begins, and no blood vomited; in violent colic there is no vomiting and purging. Feverish symptoms do not, *at first*, occur in cases of poisoning.

Internal inflammations, as of the throat, liver, and bowels, diseases of the heart, cholera, plague, apoplexy, and some other diseases, often have a similar character to cases of poison, and end fatally in equally short time. They may generally, however, be distinguished by some peculiar symptom, and by the individual circumstances of the case,—particularly the absence of fever at the commencement.

The effects of a strong dose of Poison usually shew themselves in a few minutes, though sometimes not for some hours after. As they sometimes prove fatal in a few minutes, and generally gain strength, rapidly and alarmingly, within about an hour, increasing without intermission of their severity, the proper remedy should be *immediately* used, whenever it becomes known that poison has been taken.

It is not out of place to remark here, that in many cases of accident or disease, much of the value of any directions what to do depends on the knowledge conveyed being studied at leisure moments, so as to be able to use it in time of need, without delay.

The sufferer might die while the captain is reading over the different directions. The case of *a divided artery* will illustrate this.

Fortunately, at sea, poisoning is not of very frequent occurrence. Should it, however, happen, a remedy will be found under the different articles here treated of. (See also Sweet Olive Oil, No. 34).

When it is strongly suspected, from the above symptoms, that poison has got into the stomach, though it be not known what sort of poison, not a moment is to be lost in removing it, by promoting full and copious vomiting. For this purpose, the most speedy means are, the tickling of the back part of the mouth with a feather, and repeatedly thrusting the finger as far back into the throat as possible ; also give an emetic of thirty grains of White Vitriol (No. 46), or what will often be *more handy*, a teaspoonful of Mustard in half a tumbler of warm water. When the gullet is much inflamed, however, none of these means can be employed. Other means to be used are given below.

POISONING BY THE STRONG ACIDS,—such as Muriatic Acid (or Spirits of Salts) ; Aquafortis ; Oil of Vitriol. If these have unfortunately been swallowed, give, *without losing a moment*, two tablespoonfuls of Magnesia (No. 29), mixed in half a pint of water, and repeat the dose every five minutes ; or give strong soap and water, or common whiting, or chalk (if on board), in water. Vomiting should be assisted as much as possible, but, owing to the inflamed state of the throat, tickling with a feather or finger becomes impossible ; lukewarm water, barley-water, or linseed tea, if it can be got ready immediately, must therefore be given speedily in large quantities. *No food*, not even weak broth, must be taken, till the inflammation has subsided. When the cramps and convulsions disappear, the diet may consist of a little gruel, barley-water, linseed tea, arrowroot, &c., until the patient feels quite well ; no solid food should be taken for some time.

POISONING BY CARBOLIC ACID.—1st, Get the patient to swallow immediately a pint of Olive Oil, Salad Oil, Linseed Oil, or Sweet Oil. 2nd, Encourage vomiting. 3rd, Give plenty of strong coffee or tea. 4th, Give ten grains of Camphor in milk every hour until four doses have been taken.

POISONING FROM TARTAR EMETIC.—When this has been taken in *over-doses*, the vomiting, when it begins, should be promoted by a plentiful supply of plain water, or water sweetened with sugar ; then give three grains of Quinine (No. 42) every fifteen minutes.

POISONING FROM POTASHES, HARTSHORN, AND AMMONIA.—When any of these fluids having been taken into the mouth, there will be great soreness of the mouth and throat, and difficulty in swallowing. The patient must drink and gargle with vinegar and water. The after treatment must be the same as for Acid.

POISONING FROM LEAD.—This may occur by swallowing Goulard's Extract, or Sugar of Lead, and it must be treated with large doses of Epsom Salts (No. 17), continued sufficiently strong to keep the bowels freely open three days after all the active symptoms of poisoning have passed away.

POISONING BY STRONG DRINKS.—Excessive Drunkenness must be treated with an emetic of White Vitriol (No. 46), thirty grains in a little water or beer. Clear everything away from his neck and waist, rest his head, well raised, and put him in the open air, properly protected from cold (see Drunkenness).

POISONING FROM ARSENIC.—This poison is very fatal, and if not taken in sufficient quantities to kill, it sets up very dangerous inflammation of the throat and stomach. If no vomiting has occurred, give an emetic of thirty grains of White Vitriol (No. 46), or if this be not close at hand, mustard, or warm sea water, and repeat it until he vomits. If this does not succeed quickly, the patient will probably die.

POISONING FROM LAUDANUM OR OPIUM.—If this drug has been taken in an over-dose, or as a poison, give immediately twenty grains of White Vitriol (No. 46), dissolved in a *small* quantity of water. The throat, at the root of the tongue, should also be tickled with a feather ; should vomiting not be produced, on account of the torpidity of the stomach, cold water dashed over the head will sometimes have the desired effect. Sleep must not be permitted, and the patient must be roused by the frequent application of a smelling-bottle of Hartshorn (No. 45), held to

his nostrils for a short time ; cold water poured from the spout of a tea-kettle from a height upon the patient, will be very beneficial ; if able, the patient should be made to walk about for six or eight hours, never for a minute allowing him to sleep. Give an ounce and-a-half of Castor Oil (No. 10) to relieve the bowels, which are generally costive, from the effects of the poison. Give the patient strong coffee, but in small quantities, and keep him warm.

POISONING FROM MUSSELS AND OTHER FISH.—The mussel crab, oyster, mackerel, eel, and other fish, have sometimes produced symptoms resembling those of poison ; similar effects may also be produced by eating diseased meat, rancid or rusty bacon, &c. In a few hours, or during the next day, the patient is seized with chills, acute pains in the stomach and head, restlessness, great thirst, redness and swelling of the face and eyelids, distressing itching, and red or puffy blotches all over the body, followed by convulsions, and, in severe cases, ending in death. If the symptoms shew themselves in an hour or so after the poisonous article has been taken, give an emetic of Mustard or Ipecacuanha (No. 24), and cleanse the bowels with an active dose of Epsom Salts (No. 17). If a longer time has elapsed before the poison affects the system, give a dose of Epsom Salts every two or three hours, until the bowels are freely opened.

COOKERY FOR THE SICK.

ARROWROOT.—Put a small tablespoonful of the genuine powder in a warm basin, and mix it smooth with a few spoonfuls of *cold* water. Then pour about half a pint, or rather more, of *boiling* water to it, and stir it until it thickens. Being very insipid, a little sugar may be added ; when the complaint will admit of higher seasoning, a glass of wine, or a spoonful or two of brandy, and a little sweet spice, will improve it. If necessary, it may be made hot by putting it over the fire, in a clean saucepan, for a minute or two.

WATER GRUEL.—A large spoonful of Oatmeal, rubbed smooth in a little water, should be put into a pint of boiling water (on the fire), stirring it well for a quarter of an hour, and taking care that it does not boil over. Let it settle, pour it off, and stir in a bit of butter, and a little salt.

Six ounces of oatmeal will make about half a gallon of gruel ; which will keep very well for a short time.

BARLEY-WATER.—Wash an ounce or two of pearl barley in cold water, then boil it for *a few minutes* in half a pint of water, to clean it. Drain the water off, and then add about two quarts of fresh boiling water ; a little lemon-peel and a teaspoonful of sugar may be added. Let it simmer, or gently boil down to a quart ; then pour clear off.

Or wash a handful of common barley, and simmer in three pints of water ; adding lemon-peel to flavour it.

It may also be flavoured with a little lemon-juice, or Acid of Lemons (No. 12), if desired.

SAGO AND TAPIOCA.—After soaking a teacupful in cold water for an hour or two (Tapioca generally requires much longer), drain it off, and add about a quart of fresh water. Let it now simmer over a slow fire until it becomes a clear jelly. It may be sweetened with sugar, or flavoured with wine, spice, &c.

RESTORATIVE JELLY.—Put one ounce of isinglass, forty pimento or allspice berries, and a piece of brown biscuit, into a quart of water, and boil it down to a pint ; then strain it clear off. A large spoonful or two may be taken in wine and water, tea, &c.

BEEF-TEA.—Use the Essence of Beef as directed ; but if fresh meat can be obtained, make it in the following way :—Take a pound of lean Beef for every pint of Beef-tea you want, cut it up small, and put it into a saucepan or earthen jar, with half a pint of *cold* water for each pound of meat, and let it stand for half an hour ; then place on the hob or in a slow oven, and let it *simmer*, *not boil*, for three or four hours, adding more water as it gets less. Afterwards, make up the full measure of a pint of water to each pound of meat, and let it get quite cold ; then skim off all the

fat, and warm it in small quantities at a time, as you want it for use. It may be thickened with warm gruel, wheat, or rice-flour, &c., and seasoned with pepper and salt.

EGG FLIP.—This is very nourishing and useful in fevers. Take the raw yolks of two eggs, and beat them well up with half a pint of milk.

LEMONADE.—Cut a lemon in two, and squeeze one or both halves into a jug, throwing in the lemon also ; add a tablespoonful or two of sugar, and about a pint or more of hot water. Stir it round, and cool it. Half a dram of Acid of Lemons (No. 12) may be used as a substitute for the lemon or lime-juice.

TAMARIND TEA, &c.—Hot water poured on tamarinds and raisins, prunes, currant jelly, or cranberries, if on board, will be most excellent drinks during sickness : sweetening when requisite with sugar to the taste.

IMPERIAL DRINK is made by pouring two quarts of boiling water upon one ounce of Cream of Tartar (No. 11), adding a little lemon-juice, or some shreds of orange or lemon peel, and as much sugar as agreeable. This is a delightful and cooling drink in fevers. Thin gruel may be used instead of water.

ALE OR PORTER.—When either of these drinks have become hard or sour, a little Carbonate of Soda (No. 3), stirred into it will make it fresh and drinkable.

ACT OF PARLIAMENT.

CERTAIN SECTIONS OF THE MERCHANT SHIPPING ACT,
1867.

SECTION 4.—(2) The owners of every ship navigating between the United Kingdom and any place out of the same, shall provide and cause to be kept on board such ship a supply of medicines and medical stores, in accordance with the scale appropriate to the said

ship, and also a copy of the said book or of one of the said books containing instructions.

(3) No lime or lemon juice shall be deemed fit and proper to be taken on board any such ship, for the use of the crew or passengers thereof, unless the same has been obtained from a bonded warehouse for and to be shipped as stores ; and no lime or lemon juice shall be so obtained or delivered from any warehouse as aforesaid, unless the same is shown, by a certificate under the hand of an inspector appointed by the Board of Trade, to be proper for use on board ship, such certificate to be given upon inspection of a sample after deposit of the said lime or lemon juice in the warehouse ; nor unless the same contains fifteen per centum of proper and palatable proof spirits, to be approved by such inspector, or by the proper office of customs, and to be added before or immediately after the inspection thereof ; nor unless the same is packed in such bottles, at such time and in such manner, and is labelled in such manner as the Commissioners of Customs may direct ; provided that when any such lime or lemon juice is deposited in any bonded warehouse, and has been approved as aforesaid by the said inspector, the said spirits or so much of the said spirits as is necessary to make up fifteen per centum, may be added in such warehouse, without payment of any duty thereon ; and when any spirit has been added to any lime or lemon juice, and the same has been labelled as aforesaid, it shall be deposited in the warehouse for delivery as ship's stores only, upon such terms and subject to such regulations of the Commissioners of Customs as are applicable to the delivery of ships' stores from the warehouse.

(4) The master or owner of every such foreign-going ship (except those bound to European ports, or to ports in the Mediterranean Sea, and also except such ships or classes of ships bound to ports on the eastern coast of America north of the thirty-fifth degree of north latitude, and to any islands or places in the Atlantic Ocean north of the same limit, as the Board of Trade may from time to time exempt from this exactment) shall provide and cause to be kept on board such ship a sufficient quantity of lime

or lemon juice from the warehouse, duly labelled as aforesaid, such labels to remain intact until twenty-four hours at least after such ship shall have left her port of departure on her foreign voyage, or a sufficient quantity of such other anti-scorbutics, if any, of such quality, and composed of such materials, and packed and kept in such manner, as Her Majesty by order in council may from time to time direct.

(5) *The master of every such ship as last aforesaid shall serve or cause to be served out the lime or lemon juice, with sugar (such sugar to be in addition to any sugar required by the articles), or other such anti-scorbutics as aforesaid, to the crew so soon as they have been at sea for ten days, and during the remainder of the voyage, except during such time as they are in harbour, and are there supplied with fresh provisions ; the lime or lemon juice and sugar to be served out daily, at the rate of an ounce each per day to each member of the crew, and to be mixed with a due proportion of water before being served out, or the other anti-scorbutics, if any, at such times and in such quantities as Her Majesty by order in council may from time to time direct.*

(6) If at any time, when such lime or lemon juice or anti-scorbutics is or are so served out as aforesaid, any seaman or apprentice refuses or neglects to take the same, such neglect or refusal shall be entered in the official log-book in the manner provided by the two hundred and eighty-first section of the principal Act, and shall be signed by the master, and by the mate or some other of the crew, and also by the surgeon or medical practitioner on board, if any.

And if in any such ship as aforesaid such medicines, medical stores, book of instructions, lime or lemon juice, sugar, or anti-scorbutics as are hereinbefore required, are not provided, packed, and kept on board, as hereinbefore required, the owner or master shall be deemed to be in fault, and shall for each default incur a penalty not exceeding twenty pounds, unless he can prove that the non-compliance with the above provisions, or any of them, was not caused through any inattention, neglect, or wilful default on his part ; and if the lime or lemon juice and sugar, or other anti-

scorbutics, are not served out in the case and manner hereinbefore directed, or if entry is not made in the official log in the case and manner hereinbefore required, the master shall be deemed to be in fault, and shall for each default incur a penalty not exceeding five pounds, unless he can prove that the non-compliance with the above provisions, or any of them, did not arise through any neglect, omission, or wilful default on his part, and if in any case it is proved that some person other than the master or owner is in default in any case under this section, then such other person shall be liable to a penalty not exceeding twenty pounds.

SECTION 5.—Any person who manufactures, sells, or keeps, or offers for sale, any such medicines or medical stores as aforesaid, which are of bad quality, shall, for each such offence, incur a penalty not exceeding twenty pounds.

SECTION 6.—In any British possession out of the United Kingdom, the governor, or officer administering the government for the time being, shall, subject to the laws of such possession, have power to make regulations concerning the supply within such possession of lime or lemon juice and anti-scorbutics for the use of ships; and any lime or lemon juice or anti-scorbutics, duly supplied in accordance with any such regulations, shall be deemed to be fit and proper for the use of ships.

SECTION 7.—Whenever it is shewn that any seaman or apprentice who is ill has, through the neglect of the master or owner, not been provided with proper food and water according to his agreement, or with such accommodation, medicines, medical stores, or anti-scorbutics as are required by the principal Act or by this Act, then, unless it can be shown that the illness has been produced by other causes, the owner or master shall be liable to pay all expenses properly and necessarily incurred by reason of such illness (not exceeding in the whole three months' wages), either by such seaman himself, or by Her Majesty's government, or any officer of Her Majesty's government, or by any parochial or other local authority on his behalf, and such expenses may be recovered in the same way as if they were wages duly earned: Provided that this enactment shall not operate so as to affect any

further liability of any such owner or master for such neglect, or any remedy which any seaman already possesses.

SECTION 8.—Where a seaman is by reason of illness incapable of performing his duty, and it is proved that such illness has been caused by his own wilful act or default, he shall not be entitled to wages for the time during which he is by reason of such illness incapable of performing his duty.

SECTION 10.—The following rules shall be observed with respect to the medical inspection of seamen ; that is to say,

(1) At any port where there is a Local Marine Board, the Local Marine Board, and at other ports in the United Kingdom the Board of Trade, may appoint a medical inspector of seamen.

(2) Such medical inspector of seamen shall, on application by the owner or master of any ship, examine any seaman applying for employment in such ship, and shall give to the superintendent of the Mercantile Marine Office a report under his hand stating whether such seaman is in a fit state for duty at sea, and a copy of such report shall be given to the master or owner of the ship.

(3) The master or owner applying for such inspection shall pay to the superintendent such fees as the Board of Trade direct, and such fees shall be paid into and form part of the Mercantile Marine Fund.

(4) The said medical inspectors shall be remunerated for their services as the Board of Trade may direct, and such remuneration shall be paid out of the Mercantile Marine Fund.

(5) In British possessions out of the United Kingdom, the governor or other officer administering the government for the time being, shall have the power of appointing medical inspectors of seamen, of charging fees for inspections, when applied for, and of determining the remuneration to be paid to such inspectors

FORM OF CERTIFICATE OF BIRTH.

BIRTH OF A CHILD AT SEA ON BOARD						
Date of Birth.	Name.	Sex.	Name and Surname of Father.	Name and Maiden Surname of Mother.	Rank or Profession of Father.	Signature of Master of Ship.

FORM OF CERTIFICATE OF DEATH.

DEATH AT SEA ON BOARD _____						
Date of Death.	Name.	Sex.	Age.	Rank or Profession.	Cause of Death.	Signature of Master of Ship.

LIST OF CAUSES OF DEATH.

Burns and Scalds.

Cholera.

Consumption.

Delirium Tremens.

Diseases of Kidney.

Dropsy.

Drowning.

Erysipelas.

Fever.

„ Intermittent, or Ague.

„ Scarlet.

„ Yellow.

Fits.

Fractures, or Broken Bones.

Hanging.

Heart Diseases.

Inflammation of the Lungs.

Jaundice and Liver Diseases.

Murder and Manslaughter.

Palsy.

Poison.

Rupture.

Scurvy.

Small Pox.

Starvation.

Stricture.

Suffocation.

Ulcers.

Venereal Diseases.

Wounds.

The preceding list of causes of death is appended for use in connection with the certificate. It is compiled from the list of diseases used by the Registrar-General of Births and Deaths for England and Wales, and is believed to contain the names of all mortal maladies likely to occur at sea.

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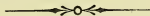
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